

NATSPEC

Product Partners
Quality Reputation Support



Case Studies and Technical Articles 2023 - 2024

Welcome



In Australian building projects, specifiers play a pivotal role in product selection, safety, functionality, and performance. NATSPEC Branded Worksections are a tool for ensuring consistency, preventing overruns, and maintaining a seamless construction process. These worksections streamline the decision-making process by providing pre-determined choices for materials, methods, and processes. This efficiency reduces the need for time-consuming on-site improvisation and results in a smoother construction process. This documentation is valuable for communication, quality assurance, and future maintenance, ensuring that the construction maintains its quality over time.

Adhering to the National Construction Code (NCC) fosters a comprehensive design approach that directly contributes to the quality of construction and safety. Compliance and product conformance are integral, combatting risks and safeguarding stakeholders involved in a project. NATSPEC's National Building Specification offers foundational support for secure and purpose-driven environments.

Architects, engineers, and specifiers use NATSPEC Branded Worksections to guide the creation of secure, sustainable, and innovative spaces. This collective effort ensures structures embody a vision of lasting quality and influence, reflecting meticulous precision in design and execution. NATSPEC Product Partners support you. Support them and their products in your next project by selecting Branded Worksections in SPECbuilder or downloading for free from www.natspec.com.au.

Richard Choy
Chief Executive Officer
NATSPEC//Construction Information

Product Partners Program

The NATSPEC Product Partners program is a service providing manufacturers with the opportunity to place their product information in the National Building Specification with a Branded Worksection. This gives design and construction industry professionals ready access to a proprietary specification from manufacturers, offering reputation, support, and quality in line with Australian Standards. Product selection is easier, which saves specifiers time and reduces risk.

NATSPEC is the trading name of Construction Information Systems Limited, ABN 20 117 574 606.

NATSPEC, founded in 1975, is a not-for-profit organisation owned by the design, build, construct and property industry through professional associations and Government property groups. It is impartial and is not involved in advocacy or policy development. NATSPEC's objective is to improve the construction quality and productivity of the sustainable built environment through leadership of information.

NATSPEC's major service is the comprehensive national specification system endorsed by Government and professional bodies. NATSPEC, the National Building Specification, is for all building structures, with specialist packages for architects, interior designers, landscape architects, structural engineers, services engineers, and domestic owners. AUS-SPEC is the local government specification system for the life cycle management of assets. Packages include Urban and Open Spaces, Buildings, Roadworks and Bridges, Public Utilities, Maintenance, and Rural Roads. NATSPEC is also responsible for the National BIM Guide and its associated documents.

Stakeholders

Air Conditioning and Mechanical Contractors' Association of Australia
Australian Elevator Association
Australian Institute of Architects
Australian Institute of Building
Australian Institute of Building Surveyors
Australian Institute of Quantity Surveyors
Construction Industry Engineering Services Group
Consult Australia
Dept for Infrastructure and Transport (SA)
Dept of Energy and Public Works (QLD)
Dept of Finance (Federal)
Dept of Finance (WA)
Dept of Infrastructure, Planning and Logistics (NT)
Dept of Treasury and Finance (TAS)
Dept of Treasury and Finance (VIC)
Engineers Australia
Major Projects Canberra
Master Builders Australia
Public Works Advisory (NSW)
Standards Australia

Front cover credits:

Project: Anadara and Alexandria Apartments
Architect: fjcstudio (formerly fjmtstudio)
Developer: Lendlease Development
Builder: Lendlease Construction and Infrastructure
Paint Contractor: Tresamber
Photographer: Peter John Miller



NATSPEC//ProductPartner



Branded Worksections have been compiled by NATSPEC and our Product Partners using the latest regulations and standards. Download for free at www.natspec.com.au



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0182p HILTI in fire-stopping
0184p KORDON termite management
0184p TERMIMESH termite management
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0192p ANCON structural components
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0311p FIELDERS KingFlor® in concrete formwork
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0341p FIELDERS SlimFlor in structural steelwork
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NATSPEC Product Partners support you. Support them and their products in your next project by selecting Branded Worksections in SPECbuilder or downloading them for free from www.natspec.com.au.

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Branded Worksections

By Phillip Spence BDM NATSPEC

NATSPEC is proud of the development and growth of the Product Partner program and the value that Branded Worksections bring to over 1800 consultant offices across Australia. The Product Partner program aligns with NATSPEC's objective to improve the construction quality and productivity of the sustainable built environment through leadership of information. A major part of this is mitigating financial, legal and safety risks through a focus on reliable technical information.

The NATSPEC update service responds to subscriber and industry feedback, changes to standards and codes, specification material submissions from external experts, developments in products and techniques, and the expertise brought into the organisation by staff and consultants.

Designers spend time and effort on the difficult task of selecting a product, finish or system that meets client requirements, as well as regulatory requirements and standards. Selections are then documented in the specification. Alternatives proposed by contractors require additional work and careful research, for which designers may not be paid.

For a specifier, a NATSPEC Branded Worksection is a means of nominating the desired product. Technical information available through a Branded Worksection includes:

- Product suitability for certain regulatory requirements, such as bushfire resistance.
- Prompts for product selection and quality standards.
- Features and performance characteristics that set the product apart, allowing contract administrators to minimise the likelihood of substitution.
- Schedules and programs that can be tailored to products and their options. This is especially useful when products come with many options or are selected to meet complex performance requirements. For these products, NATSPEC adapts the specification and selections Schedules to match the output from the Product Partners website or selection software, allowing specifiers to copy details directly into the specification.

NATSPEC provides links to technical literature relevant to the specification. This creates an accessible and efficient platform to ensure specifiers can make informed decisions. Any construction standard is voluntary until cited in legislation or written into a construction contract via the specification. NATSPEC worksections, including Branded Worksections, cite relevant Australian, international and regional standards for materials and installations. This includes some 140 NCC Deemed-to-Satisfy standards and a further 1,100 non-NCC standards. NATSPEC *Guidance* text cites 750 additional standards.

Branded Worksections may include prompts for product selection and quality standards, which is why NATSPEC editors seek evidence that products included in a Branded Worksection conform to the standards identified in the generic worksection. Branded Worksections may also include a Submissions clause requiring the contractor to submit evidence that a particular product has been installed, that it conforms to a standard, or complies with legislation.

The NATSPEC worksection 0171 *General requirements*, cross-referenced in Branded Worksections, requires that a contractor seeking to substitute a specified product must demonstrate conformity with the same standards as the original product.

Make Mitigating Risk Easy

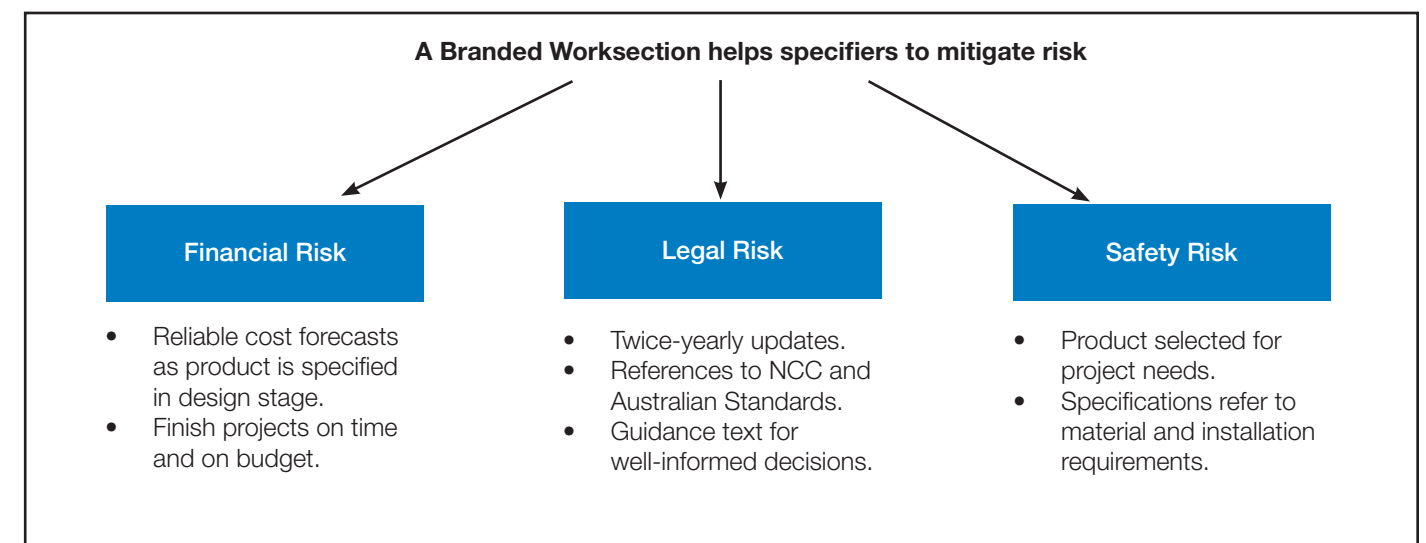


Designers and contractors need assurance that products conform to standards and comply with legislation so that they can be confident in their decision making. Reliable evidence of conformity that is relevant to Australian regulations is critical to back up manufacturers' claims of conformity and compliance.

Many product standards include an appendix setting out the means for demonstrating compliance, including the following:

- Evaluation by means of statistical sampling.
- The use of a product certification scheme.
- Assurance using the acceptability of the supplier's quality system.
- Other means as proposed by the manufacturer or supplier and acceptable to the specifier.

Branded Worksections offer specifiers an easy way to reduce risk in their work. NATSPEC's twice-yearly update service ensures all references to industry codes, regulations, standards and practices are current and accurate. The product information included in Branded Worksections allows for clarity and technical detail while also minimising the likelihood of product substitution. NATSPEC's focus on standards and conformity gives designers confidence in their decision making. Branded Worksections are an indispensable resource for any specifier wanting to streamline their projects by mitigating risk.



NATSPEC Product Partners support you. Support them and their products in your next project by selecting Branded Worksections in SPECbuilder or downloading them for free from www.natspec.com.au.





“Quality documentation is one of the most important aspects for ensuring a project finishes on time, on budget, and meets the client’s expectations of quality.

“Without the guidance of NATSPEC and the inclusion of quality project specifications, there is an increased risk that projects will not achieve positive outcomes in terms of cost, quality, effectiveness, and timeliness of construction.

“The NATSPEC Open BIM Object Standard for Building Information Modelling represents another key contribution to the construction industry.”

Grant Warner, Chief Executive Officer, AIQS



Established in 1974, ALSPEC are the market leaders in the design and distribution of innovative, high performance aluminium systems to the architectural, industrial and home improvement markets. The extensive range of window and door systems is suitable for all commercial applications and is complemented by the Carinya residential range and Invisi-Gard Stainless Steel Mesh Security System. ALSPEC systems are synonymous with excellence in design and superior performance. www.alspec.com.au



Ametalin

AMETALIN is a leading Australian manufacturer of reflective, non-reflective and non-combustible air-vapour-water-thermal control building membranes for weatherproofing, insulating and condensation management in residential, commercial, industrial, and non-combustible building systems. Products are designed for Australian climate zones for year-round thermal comfort, while reducing energy consumption, heating/cooling costs.

AMETALIN is proactively driving the industry to design and build passive Net Zero-ready and high-performance constructions. www.ametalin.com



ASKIN® is an Australian-owned manufacturer and installer of facade systems, roofing systems and temperature-controlled facilities in Australasia. ASKIN® embraces a customer first approach in delivering sustainable, lifetime value. With a network of 12 sites throughout Australia and New Zealand, ASKIN®’s vast experience is built upon a strong foundation dating back to 1964. ASKIN®’s culture of constant improvement, quality and safety assurance is supported by our technical expertise and ISO 9001 (2015) and ISO 14001 (2015) accreditation. www.askin.net.au

ASSA ABLOY
Opening Solutions

ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience. Under the iconic brands such as Interlock, Lockwood, Whitco and Yale, ASSA ABLOY Australia has long been developing innovative products. In the growing electromechanical security sector, the Group has a leading position in access control, identification technology, automatic doors and security. www.assaabloy.com/au/en



Norfolk, Burleigh Heads, QLD



Built to respond to their beachside surrounds, these apartments sit naturally in their Gold Coast location.

With a name referencing the nearby iconic trees, the natural-look exterior of the Norfolk apartments harmonises perfectly with their seaside location.

A combination of curved timber panelling and pearl-finished window framing creates a soft, natural appearance for this new beachside apartment complex. Located on Queensland's Gold Coast, the Norfolk apartments have been designed to sit comfortably in the seaside environment.



Spacious outdoor living areas

Requirement

Inspired by the iconic Norfolk pine trees directly opposite the site, architect Koichi Takada designed the building with an "organic" outer shell to

harmonise with the surrounding beach landscape while optimising the comfort of the interior spaces. Throughout the development passive design principles have been followed, allowing the building to respond and adapt to seasonal variations.

Approach

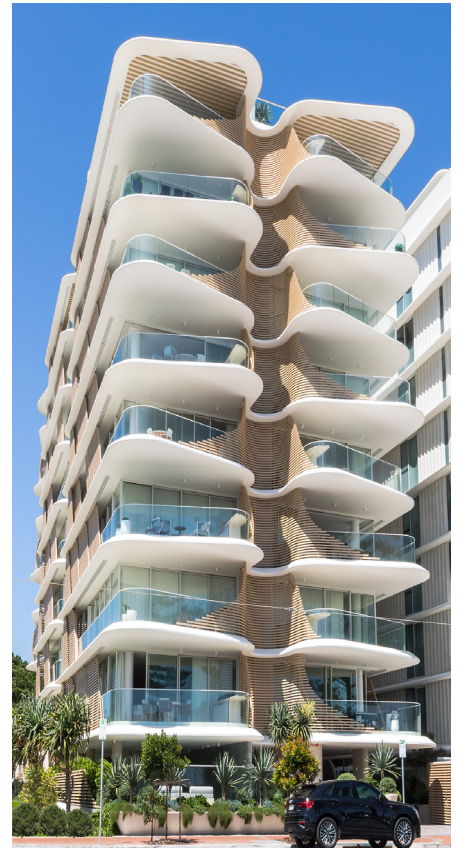
The north-facing apartments enjoy direct sunlight in the cooler winter months while being shaded at the height of summer. The slatted timber screens provide solar protection and privacy while their moveable nature allows them to be repositioned to help regulate interior temperatures as the sun's position changes.

The distinctively shaped balconies, accessed via Alspec ProGlide High-Performance Sliding doors, have been cleverly designed to provide shade where needed. The overlapping balcony slabs optimise overhead shading for the levels below, in addition to the vertical protection provided by the sliding screens.

Results

To address the diverse glazing needs across the site, a selection of Alspec's window fixed framing products were

used from the ecoFRAMEplus, Hunter Evo and McArthur ranges, while Alspec's 50mm Awning Windows were selected for openable window locations. The floorplans have been designed to take advantage of cross ventilation and encourage natural breezes with well-positioned openable windows.



The buildings curved façade takes its shaping from the local Norfolk Pines

The 10-level complex includes 15 apartments and 2 split-level penthouses, all enjoying stunning 180-degree coastal views from the southern end of Burleigh Beach. Residents have access to ground-floor shared facilities including a gym, sauna and an outdoor pool.

Architect: Koichi Takada Architects

Builder: Hutchinson Builders

Fabricator: Total Concept Group

Photography: Troy Sanders



The extensive glazed façade allows views from throughout the building



Newman Catholic College, Smithfield, QLD



Newman Catholic College, opened in 2022, is a co-educational Catholic secondary college co-located with James Cook University at Smithfield. It is the newest secondary college in the Far North Queensland region and the first Catholic school in Australia located within a university precinct.

Requirement

Specifying for buildings located in the wet tropics is a rigorous process as they need to be equipped to endure the unpredictable conditions and extreme wind loads of Far North Queensland.

The external building envelope needed weatherproofing to meet certain requirements. Considerations included:

- External Cladding Rigid Class 1 Vapour Barrier.
- The development is multi-storey and has Ultimate Limit State pressures of up to 7 kPa on the 4th storey.
- NCC Volume 1 and Volume 2, Deemed to Satisfy non-combustible construction requirements.
- Fire-resisting building systems including:
 - Sheet metal roof.
 - Lightweight clad external facades.
 - Drained cavity wall construction.

Approach

The project requirements were addressed via the careful selection

of materials for specification to meet and exceed the design criteria, with particular attention paid to:

- Wind loads: External wall studs are designed to withstand wind pressures calculated as a combination of external and internal forces, with all local pressure and other applicable factors applied accordingly.
- Wind loads: External net design wind pressures were calculated in accordance with AS/NZS 1170.2:2011 'Wind Actions'.
- Seismic Loads: Calculated in accordance with AS 1170.4 'Earthquake actions in Australia'.
- Deflection Criteria: Adopted for external wall framing.
- Particular attention shall be given to fastener requirements in external cladding applications.



FireSark® was designed and installed as a roof sarking and wall wrap

Design Specification

Ametalin FireSark® Class 1 - Vapour Barrier was specified for application to the construction framework.

Benefits

FireSark® exceeds the project requirements for Ultimate Limit State (ULS) pressures. In the ULS test report FireSark® achieves 8.0 kPa, which is equivalent to 0.81 tonnes/m² of positive and negative resistance for endurance to high wind loads, water ingress, and falling limbs and debris in cyclonic weather events.

FireSark® was the versatile solution, offering the benefits of being both an air and smoke barrier, which is critical for fire safety, assisting building occupants' safer passage in an emergency.

With a UV exposure of up to 180 days, the project team did not have to worry about longer build times due to delays in delivering other building materials.

Significant cost savings were made by using FireSark® instead of a rigid air barrier and meeting the project requirements. Time was saved by faster installation of the product.

FireSark® ticked all the boxes for compliance and installation into non-combustible constructions, offering a secondary barrier to weatherproofing and managing condensation risk. It performs as both a radiant barrier and air barrier, which assists in delivering greener thermal performance and energy efficiency.

Results

Newman Catholic College is a new state-of-the-art facility for which FireSark® delivers a compliant, efficient and cost-effective solution. FireSark® exceeds the project requirements for use in multi-storey non-combustible constructions.

Architect: TPG Architects

Contractors: Bryant Building Contractors

Photography: courtesy of © 2022 Newman Catholic College. Catholic Education, Diocese of Cairns



FireSark® installed on the Newman Catholic College complies with NCC 2019 and NCC 2022 Deemed-to-Satisfy Provisions for non-combustible constructions



St Albans Aquatic Centre, Brimbank, VIC



The St Albans Leisure Centre (Health and Wellbeing Hub) in Melbourne's Western Suburbs is a state-of-the-art facility, seen as a template moving forward for such facilities across Australia. The brief from Brimbank City Council to Williams Ross Architects, was to provide the community with a facility that not only provided sporting and leisure features, but also offered a range of preventative health, education and social services programs delivered by co-located tenant partners.

The Brimbank City Council awarded the project to ADCO Constructions as the principal design and construct contractor. ADCO, an industry leader in aquatic and leisure centre delivery, have confidently completed over 40 large scale aquatic and community leisure developments in recent years.

The \$65 million contract saw the demolition of the existing St Albans Leisure Centre and the construction of the new Health and Wellbeing Hub, which features a 50-metre 10-lane swimming pool, a learn-to-swim pool, warm water recovery pool, aquaplay area and two water slides, a 24-hour gym, a wellness centre, a community program room as well as meeting and function rooms.

Requirements

Williams Ross Architects have been at the forefront of innovative services in pre-design analysis, building design and documentation, construction, and project management.

The team specialises in aquatic, sports & recreation, cultural & community services and education design.

St Albans Leisure Centre required a fully non-combustible external building envelope, therefore the architects sourced ASKIN Volcore Vivid Panel. The ASKIN Volcore Vivid Secret Fix Architectural profile is a continuous insulation that provides the benefits of airtightness and weatherproofing in a non-combustible panel. In order to achieve the design aesthetic, Askin worked closely with Williams Ross Architects to customise a panel which featured Weathered Iron external finish with the ASKIN 200+ internal finish, ideal for aquatic centres.

The centre has achieved a 6 Star Green Star Design & As Built rating by the Green Building Council of Australia, the first aquatic centre in Australia to achieve this. The rating represents world leadership in sustainable building design and construction, the highest rating possible. "The local manufacturing of

the product also enabled us to reduce our carbon footprint and support local industry." Stephen Maxwell (Director: Williams Ross Architects).

Approach

"ASKIN provided a valuable service in engineering the attachment of the folded aluminium cassette cladding to the insulated wall panel system. Various detailed workshops were undertaken with Askin and the sub-contractor to achieve an outstanding result, both aesthetically and technically" Stephen Maxwell.

Results

"These types of buildings, which serve the public, are extremely rewarding to be involved in. Public pools are a much-loved community melting pot, and completing a project such as this always leaves you smiling at the end when you see kids racing down the slides, or the warm water pool full of oldies loving their water aerobics.

Askin provided a valuable role on the project, working with the design team and the contractor to push the limits and go the extra mile to achieve an outstanding result." Stephen Maxwell.

ASKIN Performance Panels has been providing the Australian Market with innovative products and systems for over 55 years. The company is fully Australian Owned with manufacturing facilities across Australia and New Zealand. With this vast experience, ASKIN are the trusted brand for construction within the commercial and industrial sectors.

Architect: Williams Ross Architects

Client: Brimbank City Council

Principal Contractor: ADCO Constructions

Contractor: Fawcner Roofing

Photographer: Adam Shannon (ASKIN)



The Askin Vivid Insulated Panel & Aluminium façade system in custom colour matched Weathered Iron



0428p ASKIN® VOLCORE performance panel roofing; 0428p ASKIN® XFLAM roofing system
0437p ASKIN® VOLCORE performance panel cladding; 0437p ASKIN® XFLAM performance panel cladding
0762p ASKIN® XFLAM performance panels in cool rooms

www.askin.net.au

Allianz Stadium, Sydney, NSW

ASSA ABLOY
Opening Solutions

Allianz Stadium (also known as Sydney Football Stadium during construction) was redeveloped by the NSW State Government on the site of the original stadium at Moore Park, located next door to the Sydney Cricket Ground. The stadium opened on August 27, 2022 with a free community day, followed by the return of rugby league, soccer, rugby union and concerts.

The stadium provides 42,500 undercover seats and best-in-class member and corporate facilities, all located closer to the action than ever before – and just a stone's throw away from Sydney CBD.

It ensures NSW remains the number one choice for sporting and entertainment events.

The ASSA ABLOY team was thrilled to secure the project and to collaborate with the design team including John Holland & Cox Architecture, Australia's leading construction group and architecture firm.

ASSA ABLOY Opening Solutions and ASSA ABLOY Entrance Systems

worked closely together to secure this project for the wider ASSA ABLOY Group. "Right from the start, we understood how important it was to be involved in such a significant State project," said ASSA ABLOY Opening Solutions Regional Sales Manager for Specification (NSW & ACT), Stephen Hill.

Requirement

"The whole team worked closely to manage its capacity to ensure we could meet the client's deadline. It truly was a full team effort," said Stephen.

ASSA ABLOY Opening Solutions worked on this project from the design stage right through to completion with John Holland & Cox Architecture.

"During the design phase of the project we liaised with most of John Holland's subcontractors on the façades, glazing, fire doors, electrical and gates. This enabled us to secure a larger portion of the products supplied on this project, including mechanical and electro-mechanical locks, keying, automatic door operators and more," Stephen said.

Approach

For this project, the architects used ASSA ABLOY's Opening Studio™ collaboration software.

The following ASSA ABLOY products were supplied and installed: Lockwood Synergy 3572 Series Mortice Locks, 1800 Series 144 Brass Core Lever, 726 Door Closer, ABLOY Protec2, ABLOY Protec2 CLIQ and ASSA ABLOY Entrance System Auto Swing Door Operators.

Results

ASSA ABLOY Opening Solutions provides door openings and products for access solutions. As a global leader in door opening solutions, ASSA ABLOY Opening Solutions is always proud and excited to work on redevelopment projects like the new world-class Allianz Stadium.

Architect: John Holland & Cox Architecture

Photography: Supplied by Venues NSW



ASSA ABLOY Opening Solutions worked on this project from the design stage right through to completion with John Holland & Cox Architecture



0455p ASSA ABLOY door hardware

www.assaabloy.com/au/en



Architectural Window Systems (AWS) is one of Australia's leading suppliers of aluminium window and door systems. AWS offers an extensive range of Australian designed aluminium window and door suites for residential and commercial applications. AWS designs, tests, finishes and supplies aluminium window and door systems under the Vantage and Elevate™ and ThermalHEART™ brands to more than 200 licenced manufacturers throughout Australia. www.awsaustralia.com.au



BlueScope is Australia's largest manufacturer of steel. Steel products manufactured by BlueScope include value-added metal coated and painted steel products such as COLORBOND® steel, ZINCALUME® steel, GALVSPAN® steel and TRUECORE® steel. These products are supplied in coil form then further processed by other manufacturers into products such as roof and wall cladding, insulated panels, rainwater goods, light structural/framing sections and fencing for use in both residential and non-residential construction. www.bluescopesteel.com.au



Breezway is the leading Australian manufacturer of high performance, energy rated, Altair Louvre Windows. Fully compliant with AS 2047 (2014), Altair Louvres are designed to open twice as wide as other windows to provide maximum light and ventilation into sustainable buildings. Altair Louvres are cyclone rated, offering automation with the award winning Powerlouvre System. Extra strength and safety can be provided to windows using the Stronghold System. Double glazing is also available using the IGLU System. www.breezway.com.au



Capral Aluminium, established in 1936, is Australia's largest manufacturer and distributor of aluminium profiles. Our comprehensive range of commercial, residential, security and industrial products has an enviable reputation for quality, style and high performance. As a local systems designer, NATA-accredited testing authority, and with innovative R&D capabilities, we are well-positioned to take advantage of changing building regulations in Australia and technically support our brands, including Artisan Architectural, AGS Commercial, Urban Plus, Futureline Thermal and Amplimesh. www.capral.com.au



The Cavity Slider Experts

CS Cavity Sliders are the cavity slider experts, manufacturing high quality cavity sliders and related products for the residential, architectural, commercial and health care markets.

Established in 1986, their mission is to engineer and produce the best cavity sliding door solutions. The extensive range also includes sliding door track systems, wardrobe sliders, aluminium door leaves, sliding door hardware and automated cavity sliders. www.cavitysliders.com.au



DANPALON is a patented glazing snap-connection system with concealed fasteners that provides for 100% watertightness; free structural and thermal movement within a flexible system; structural properties that allow for a significantly reduced substructure; quick and easy installation; the elimination of gaskets and sealants; the elimination of fixing penetrations through the sheet and 99.9% UV protection with the protection coating co-extruded with the sheeting, eliminating any chance of delamination. www.danpal.com.au



Smith Lane Hub, Clyde North, VIC



The Smith Lane Hub is a beautiful two storey sales hub for Mirvac in the growth corridor of the South Eastern Suburbs of Melbourne. In alignment with their brand of luxury residences and iconic commercial landmarks, Mirvac endeavoured to create an architectural structure that compliments the landscape of the Smith Lane Development.

- A curated community
- A vibrant town centre
- An abundance of greenery
- Village-like setting; and
- High quality homes

To achieve continuity between the sales hub and its surrounds, the architect chose to limit solid walls and include large expanses of glazing. Creating a space where clients feel calm and at ease upon entering, it's also ideal for clients who like to take time making decisions, connecting with what may be 'home' to them in the future.

Approach

To make this possible, Mirvac and Stylerite Windows and Doors selected the Series 624 CentreGLAZE™ Double Glazed Commercial Framing, a system by Elevate™ Aluminium Systems. This enabled 9-metre-high windows, spanning two floors, allowing natural light to fill the space. When combined with sun fins for shading and 24mm thick double-glazed units, it reduces the amount of heat loss during winter and heat gain during summer.

Other products used include the Series 704 SlideMASTER™ Sliding Door, Series 52H Commercial Door, Series 400 Single Glazed CentreGLAZE™ 102mm Framing, Series 466 Awning Window, Series 704 SlideMASTER™ Sliding Door and Louvres.

Results

The result is a beautiful two storey sales hub that complements its surrounds. The floor to ceiling curved glass façade, hugs the structure, softening it and creating fluidity of space. The outcome is a light filled space where clients feel comfortable making important decisions.

Smith Lanes Hub is architecturally perfect, balancing functionality, aesthetics, and tranquility. It is a modern and inviting space where the community can meet, enjoy, and connect.



Series 624 CentreGLAZE™ with sun fins

Requirement

Whilst the sales hub is the epicentre of this development, it was vital the surrounding area created and provided:



Activation Space

Fabricator: Stylerite Windows & Doors

Builder: Mirvac



Mirvac Sales Hub



0451p AWS aluminium windows and doors

www.awsaustralia.com.au

Grattan Street Apartments, Prahran, VIC



Situated in the Melbourne suburb of Prahran, amongst heritage cottages and cafes and across from Grattan Gardens, this striking multi-residential development blends artfully into its surroundings.



The sloping facade structure is a TRUECORE® steel frame engineered to support the tiles as well as the distinctively large windows

The sloping facade, tiled in hues of green gently pulls away from the street, allowing it to sensitively harmonise with the park around it. The windows that punctuate the facade's design, capture views of the surrounding environment, and allow light to fill the internal spaces. The appointed builder, Cobild, not only delivered on the design intent of this facade but enhanced it with the clever selection of cladding material and the structure required to support it.

Requirement

The facade design originally called for the use of hot-rolled structural steel with a glass-fibre reinforced concrete skinned cladding (GRC). With the desire to improve the facade's enduring visual appeal and serviceability, Cobild recommended that the facade structure was changed to that of a structurally engineered Light Gauge Steel (LGS) frame, designed to support roof tiles as well as the distinctively large windows.

Varying in colour from deep forest greens to lighter turquoise, the skilful blending of the high gloss imported tiles delivers an intensity of colour that heightens the visual interest of the facade's finish. However, the modularity and weight of the imported terracotta tiles also added to the design complexity, and the demand on the facade structure underneath.

Approach

Lightweight yet strong, LGS structural framing made from TRUECORE® steel was the material of choice for the facade structure. Utilising almost 13,000 lineal metres of TRUECORE® steel, Bolt Blue Constructions and Dynamic Steel Frame collaborated with the facade engineers to deliver a facade frame with the structural adequacy to support the significant weight of the roof tiles and the protruding windows.

"This project really showcases what structural framing made from

TRUECORE® steel can achieve with the right expertise." said Peter Blythe, Director of Dynamic Steel Frame.

With the window reveals protruding above the face of the tiled facade, a specialised flashing system was required to ensure waterflows were channelled around the windows and down the facade. The LGS facade made from TRUECORE® steel was fabricated to fine tolerances to both structurally support and accommodate these flashings.

Post-tensioned concrete slabs were used at each level of the build, providing rigidity to the structure. Using over 800 brackets and 1600 bolts, the LGS facade structure was then securely connected to these slabs. The final facade structure was also designed so the battens could be installed at defined intervals to support the roof tiles.

Results

Alex Solam from Cobild stated that, "significant effort was required at the design stage to ensure the prefabricated LGS frames were consistent with the architect's vision, performed structurally, and could be efficiently installed during construction."

Given the uniqueness and complexity of the design, Dynamic Steel Frame spent many hours finalising the details of the fully engineered LGS facade structure prior to manufacture. This commitment, coupled with the precision achievable with LGS fabrication, resulted in the efficient installation of the facade structure.

Architect: Plus Architecture

Fabricator: Dynamic Steel Frame

Façade Engineer: Inhabit

Builder: Cobild

Developer: Little Projects

Façade Installer: Bolt Blue Constructions

Sources:

Peter Blythe [PB], Director, Dynamic Steel Frame

Alex Salom [AS], Contracts Administrator, Cobild



Grattan Garden's sloping tiled facade delivers an intensity of colour that heightens visual interest



0341p GALVSPAN® steel purlins and girts in structural steelwork 0342p TRUECORE® steel light steel framing
0423p COLORBOND® steel and ZINCALUME® steel in roofing
0436p COLORBOND® steel and ZINCALUME® steel in cladding

www.bluescopesteel.com.au

Northside Christian College, Everton Park, QLD



Northside Christian College is recognised as a leader in Education Innovation. The Centre for Innovation and Creativity (CInC) caters for their award-winning Challenge Based learning program and houses individualised learning within an innovative interdisciplinary framework.



Northside Christian College

Like the pedagogy it houses, the building has evolved from a collaborative process with staff, and observations of student's existing learning practices. The result are spaces which encourage community

gatherings, informal and formal learning, honouring and displaying the student's talents, and nurtures small to large group or individualised learning. The unique physical and pedagogical environment enables students to move throughout the three-storey building tailoring personalised interdisciplinary experiences in art, design, film, drama, dance and music.

Requirements

A successful creative learning space encourages communication, social interaction and relationships. It fosters independent exploration, inviting students to delve deeper, to investigate, represent and display their learning.

Through these environments, students develop a love for learning and create fond memories.

The Centre for Innovation & Creativity delivered three critical spaces:

Learning spaces that promote interdisciplinary learning, and foster collaboration among students from different grade levels over multiple years, have flexible schedules without designated teaching areas.

Circulation spaces that are moments for pause, gathering, storage, and the honouring and display of learning in

action and learning outcomes.

And, community spaces, which at different times and in different scenarios can facilitate moments for reflection and honouring, areas for learning on display, and accommodate large celebrations and events for the College community, wider education community and neighbourhood.

Approach

Breezway Louvre Windows have been incorporated into these spaces to help naturally ventilate the areas and create comfortable learning environments for students and teachers. Unlike most other window types, Breezway Altair Louvre Windows deliver ventilation through the entire window area, so they maximise the rate at which fresh, outside air can be allowed into the learning spaces. This high ventilation rate is also part of the reason why they're incredibly energy efficient. With large volumes of natural ventilation, the transmission of infectious illnesses is reduced thereby improving the health of students and teachers occupying these areas daily and improving their overall learning outcomes.

Results

It has been observed that these spaces have exceeded staff and student expectations, sparking innovative practices and developing Northside Christian College's award-winning pedagogy. These spaces are a hub of activity inside and outside school hours, and during lunch where students collaborate between disciplines on co-curricular activities. The facility has enabled greater community outreach and a home for existing and new community celebrations.

Northside Christian College Centre for Innovation and Creativity was awarded the 2019 Learning Environments QLD Commendation for New Construction/ New Individual Facility Over \$8Mil.

Architect: McLellan Bush

Client: Northside Christian College

Photographer: Angus Martin



Classroom utilises Breezway Louvres and fixed glazing for natural light and ventilation



0456p BREEZWAY louvre windows

www.breezway.com.au

One Sydney Harbour, Barangaroo, NSW



The three striking residential towers that comprise One Sydney Harbour are the final piece of Barangaroo South's transformation. More than ten years in the making, this incredible precinct has seen Sydney's iconic waterfront become a world-class destination.



CS SquareFormed Cavity Slider with SofStop (Credit Sydney Projects)

One Sydney Harbour features three towers; Residences One, Two and Watermans Residences. They are designed by Pritzker Prize winning master architect Renzo Piano, in collaboration with Lendlease, and have set a new benchmark in luxury living.

Requirements

CS Cavity Sliders were engaged by Sydney Projects to provide cavity sliding doors for the residences, which include a mix of Premium, High and Luxury apartments. Sydney Projects specified CS Cavity Sliders because of their reputation in the market to be able to supply a premium product with the capability to be customised to a specific detail on either side of the pocket. A combination of MidWay, TimberFormed and SquareFormed cavity sliders were used to fulfil the requirements of the build. Most bathrooms within the project are fitted with stone slabs internally and 13mm plasterboard on the other side. Special grooved jamb MidWay cavity sliders have been designed to enable the builder to use specific wall linings of varied thickness on either side of the cavity.

Approach

The CS MidWay is a mid-range cavity slider designed to suit standard door sizes as well as the 2200-2400mm high doors now commonly specified. It incorporates increased vertical stability and greater resistance to temperature variations, making it a practical option for bathrooms and kitchens. It is available in standard or made to measure sizes up to up to 2400mm high x 1100mm wide. This premium quality unit was customised for One Sydney with special grooved jambs. CS TimberFormed units were used for other units up to 2700mm high.



CS MidWay Cavity Slider with grooved jambs, ready for installation

There are also Squareformed cavities used throughout the project into wardrobes and other areas of the apartment with consistent wall linings on both sides of the pocket staged at 13mm. The CS SquareFormed cavity slider combines a SquareStop Split Jamb with Full-Height and NoClosingJamb detail. This complete solution provides a seamless, clean flow around doorways and is ideal for large room dividers or areas such as hallways where a discreet door that is rarely closed is required.

The unique design of the split jamb makes finishing on site quicker,

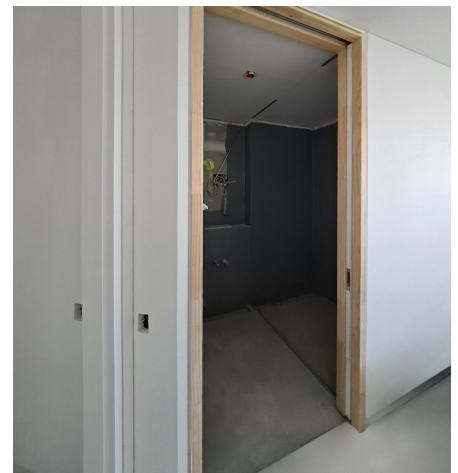
easier, neater and stronger than other methods.

Results

An iconic project such as this required a top-of-the-line door solution, so all units were provided with Twin SofStop – soft open and soft close sliding doors. SofStop is available as an optional add on to most products from the CS Cavity Sliders range.

The project has spanned over three years and CS Cavity Sliders are supplying approximately 350 cavity pockets across two residential towers, including penthouses. The third tower is going through tendering at the moment and will include an additional 180 pockets throughout.

CS Cavity Sliders were an excellent solution for these large residential projects, maximising space and creating a streamlined aesthetic. With their sleek design and innovative functionality, cavity sliders eliminated the need for traditional swinging doors that take up valuable floor space and disrupt the flow of a room. CS Cavity sliders provided a seamless, modern look.



CS MidWay Cavity Slider with grooved jambs

Principal Architect: RPBW

Executive Architect: PTW

Client: Sydney Projects Co Australia Pty Ltd

Photography: CS Cavity Sliders Pty. Ltd

MyState Bank Arena, Glenorchy, TAS



The old Derwent Entertainment Centre received a spectacular refurbishment as part of the Tasmania JackJumpers' successful entry into the NBL in 2021. Co-ordinated by LK Group, designed by Philp Lighton Architects and built by Vos Constructions in a condensed timeframe during the peak of COVID disruptions, the project's most visible external feature is a stunning new entrance canopy located very close to the banks of the Derwent River.

Requirement

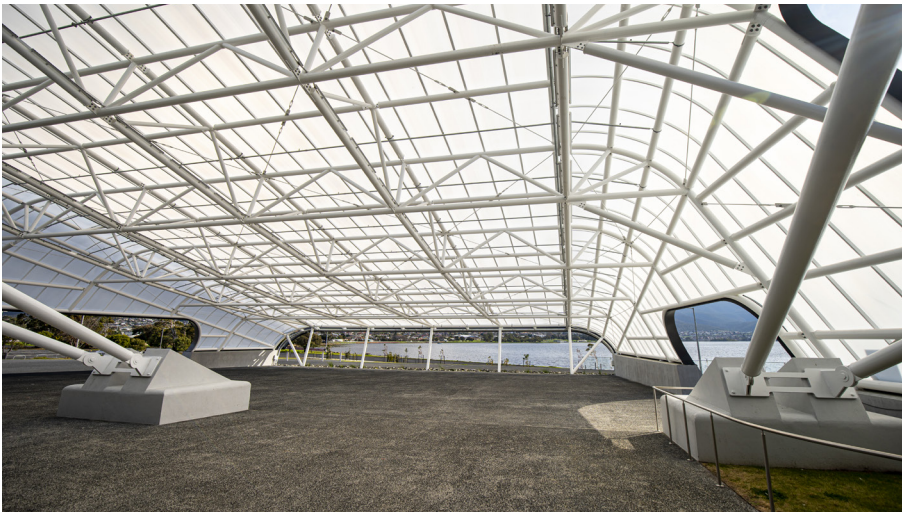
The canopy was conceived as a large translucent design feature for providing

comfortably diffused natural light in daytime and a stunning lantern-like effect when backlit at night. It required significant strength and resilience to suit a windy coastal location, though being lightweight and assembled quickly were equally important criteria.

A clean and jointless external appearance with radiused edges were required to satisfy the ambitious design intent. Fire safety was of paramount importance given that the canopy represented the egress point of the building.

Results

With all these factors considered, a bespoke Danpalon configuration represented a viable solution. 36 metre fire retardant panels were specially manufactured and transported from Israel, along with aluminium framing custom fabricated locally. After conducting project-specific fire testing and selecting the ideal external finish for a radiant night time appearance, production commenced and installation was completed just in time for the JackJumpers to start on their journey towards a finals appearance in their debut season.



The entry canopy provides both a dramatic design statement and a large weather-protected congregation space that ensures safe public egress from the stadium if a fire was to occur



Danpalon panels are strong and resilient enough to suit the harsh coastal environment while being flexible enough to achieve the radiused corner that was key to the architectural design intent

Architect: Philp Lighton Architects

Builder: Vos Constructions

Photography: Brad Harris Photography



Philp Lighton and LK Group wanted an external appearance as smooth as possible, which was facilitated by specially transporting long panels and arranging for the joints to be concealed internally



"NATSPEC fulfils an important role in the building and construction industry.

"NATSPEC not only assists those in the supply chain to conduct their day to day activities, but also contributes to the standardisation of practices across the industry to produce better building quality outcomes. Consult Australia is proud of our founding membership of NATSPEC and highly recommends NATSPEC documents to our industry."

Jonathan Cartledge, Chief Executive Officer, Consult Australia



DCTech is 100% Australian owned and operated with over 20 years' experience supplying a range of technically advanced insulation materials and related products to the Australian construction industry. DCTech offers a clear focus on customer service through national product availability, installation and maintenance advice, a comprehensive technical library, and competitive pricing.

DCTech is large enough to ensure quantity, yet small enough to ensure quality, offering a total system solution from foundation to roof. www.dctech.com.au



DELTA PANELS is a 100% Australian owned and operated manufacturer of insulated panels. Its range of products includes roof, wall and patio systems, plus a wide range of accessories. The range of panels, in various styles and colours, has been engineered for enhanced performance in Australia's harsh environment. www.deltapanel.com.au



Dincel Structural Walling is a lightweight, 'snap together' modular polymer formwork which is filled with concrete. It is suitable for constructing virtually any type of load bearing structural wall. Architects and building designers can enjoy complete creative freedom by specifying Dincel to build straight or curved concrete walls, which can be beautifully finished. Dincel walls are also tested by NATA Accredited laboratories, CSIRO and Warringtonfire as being waterproof and fire safe. www.dincel.com.au



Dribond Construction Chemicals, in business since 1974, is one of the most respected manufacturers of acoustic membranes, tile adhesives, waterproofing, grouts, sealers, repair products and other solutions for the building industry in the Asia-Pacific region. A multinational, family-owned and operated business that focuses on quality and service, Dribond Construction Chemicals has factories in Australia, New Zealand and Malaysia, with locations in Adelaide, Brisbane, Melbourne, Perth, Sydney, Auckland and Kuala Lumpur. www.constructionchemicals.com.au



DTAC is an Australian company with over 15 years' experience in design and manufacturing excellence, all backed by industry leading support. DTAC comprises a specialist team of professionals that prides itself on offering aesthetically pleasing, BCA compliant, architectural tactile ground surface indicators, stair nosing and edging, urban landscape edge protection products and more. DTAC's unequalled attention to detail enables architects, designers and builders to make the right choice for aesthetic and functional conformance in every project. www.dtac.com.au



Private Heritage Residence, McMahons Point, NSW



In the realm of construction and renovation, certain challenges demand a specialised approach, requiring the expertise of a knowledgeable acoustic consultant, skilled builder, and careful consideration of product selection. This was precisely the case in the sound dampening challenge faced by a heritage residence. With the objective of minimising noise transfer, the successful resolution hinged on the depth of knowledge and experience, coupled with the discerning selection of appropriate products. By delving into the intricacies of sound insulation and employing the acoustic consultant's expertise, the builder was able to overcome the challenge and create a harmonious environment within the heritage residence. This case study celebrates the invaluable roles played by the acoustic consultant, builder, and product selection in achieving the desired outcome.



TecSound SY installed between studs preventing sound transmission

Requirements

In the extensive renovations of their heritage property in McMahons Point, Sydney, the owners had a crucial priority of minimising noise transfer between the bedroom and the adjoining family bathroom. They were particularly concerned about various noise sources, including wastewater pipes, general floor noise, and airborne sounds. To address this challenge, their chosen builder sought the expertise of Acute Thermo Acoustics in Glendening, renowned acoustic experts. The objective was to create an effective acoustic insulation barrier that would successfully mitigate the transfer of noise between the two rooms.

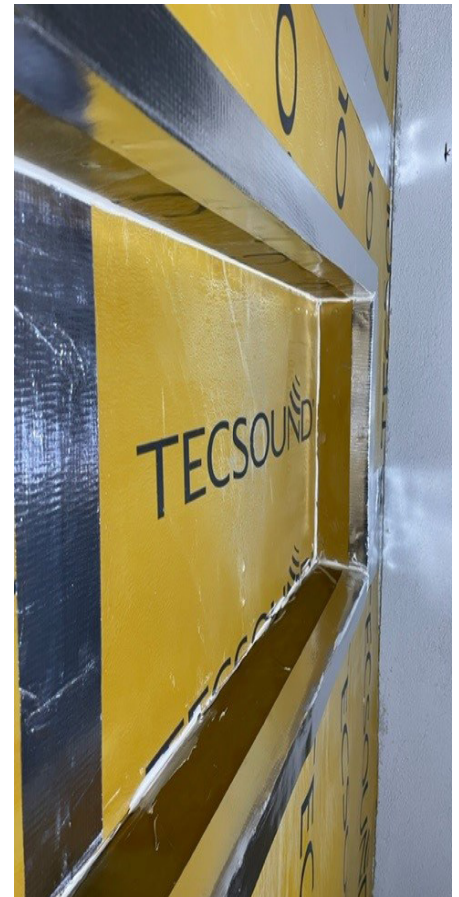
Challenge

Remediating heritage buildings presents unique challenges due to the preservation of their historical elements, which often impose limitations on available solutions. In the context of acoustic management, effectively addressing the flanking paths through which sounds travel between rooms becomes crucial in reducing both impact and airborne noise transmission. Such was the case with the McMahons Point property, where builders were unable to make modifications to the ceiling or window areas. In response to these limitations, Acute Thermo Acoustics devised a comprehensive plan that carefully considered the constraints and focused their efforts on the wall and floor spaces. By adapting their approach and working within the designated areas, Acute Thermo Acoustics aimed to achieve optimal acoustic management for the heritage residence.

Approach

A comprehensive and site-specific approach was adopted to address the challenges encountered in the project. To effectively tackle the sound transmission issues, a combination of multiple products was employed. CSR Soundfill infill was utilised to enhance the acoustic insulation of all wall frames, while acoustic lagging was applied to all wastewater pipes within the floor space. Tecsound SY acoustic panels, obtained

through DCTech were carefully installed on the face of the timber frame, with a 30mm overhang to accommodate the FC board. Special attention was given to cutting and sealing joints using reinforced aluminium tape and flexible sealant as needed.



TecSound SY installed between studs preventing sound transmission

Outcome

The outcome at McMahons Point has been highly successful for the owner, as the reduction in impact and airborne noise transmission from the bathroom to the adjacent bedroom, facilitated by framed drywall and floor space treatments, was noticeable. The primary acoustic product, Tecsound SY acoustic panels, impressed the builder with its superior quality, ease of use, and performance that exceeded expectations.

Contractor: Acute Thermo Acoustics Pty Ltd

Photographer: David Wijesinghe

Cleveland District State High School, Redland City, QLD



Cleveland District State High School is located in Redlands, a city to the south east of Brisbane that has undergone a large population growth. The School now has the 4th largest student population within the Queensland State Education system.

Requirements

The general project scope included providing Insulated panels that could cover the roof in single spans. Thus, eliminating the requirement for any mid-span joining and any on-site fabrication work.

The roof was designed as a cantilever divided into 6 separate sections. Half of the roof requiring the panels to span 15.47 m while the balance of the roof panels measured 11.85 m.

meet the BCA requirements covering structural performance, energy efficiency & fire resistance.

The building site, in the middle of an existing cluster of school buildings, created site access and maneuverability issues, and it was necessary to develop practical solutions for the unloading of such large panels.

Solutions

Delta Panels' range of certified roofing products provided the solution that could meet the project specifications. The range of CodeMark certified panels have various core infills options, including mineral wool and fire-retardant EPS. DualCore panels comprise a combination of both materials.

technical requirements. All the roofing panels were finished with a Shale Grey trapezoid top sheet and a Surf Mist interlocking steel under-skin.

IRT roofing and Delta Panels were able to resolve the numerous on-site issues caused by the limited access and work space by coordinating extendable trailers; this allowed the panels to be hoisted directly to the roof tops. Thereby eliminating any need to store product in the already limited work site.



Assembly Area

Benefits

Without making any modifications to the project design the strategic placement of Delta Panel's DeltaTrim™-EPS-FR panels ensured that the roof met all BCA requirements while working in a crowded building site with very little site maneuverability and clear access.

Client: Queensland Department of Education Cleveland State High School

Builder: Adler Constructions

Roofing Contractor: IRT Roofing



Assembly Area 2

The roofing material for the project required a Code Mark Certificate of Conformity stating that the Panels

For this project the selection of the DeltaTrim™-EPS-FR panels, with a 150mm core, offered a ready-made solution that could meet the project's



Student Engagement Centre as seen from above



AT238, Perth, WA



Recently, Dribond Construction Chemicals had the opportunity to supply products to a construction project, AT238, 238 Adelaide Terrace Perth, which was being built by Hanssen. Dribond Construction Chemicals were able to fulfill the client's requirements, provide a suitable approach, and deliver exceptional results.



Entertainment area with a BBQ set for guests

Requirements:

Hanssen had specific requirements for the tiling system that they wanted for AT238. They wanted a simple tiling system that required a minimal amount of product type. Furthermore, Hanssen wanted the products delivered on time

and to have the product in stock when required for installation.

Approach:

To meet Hanssen's requirements, Dribond Construction Chemicals developed a specific approach that would deliver the best tiling system possible. The approach included dividing Dribond's adhesives/waterproof membranes into two different systems. The first system was designed for the swimming pool area, which required an adhesive and waterproofing system suitable for full immersion.

Dribond Construction Chemicals selected Liquid Flash 2 (0621p), Kemgrip Floor and Wall (0631p) mixed with Elastacrete (0631p) for this system. It is a high-performance adhesive and waterproofing system that is perfect for a swimming pool environment.

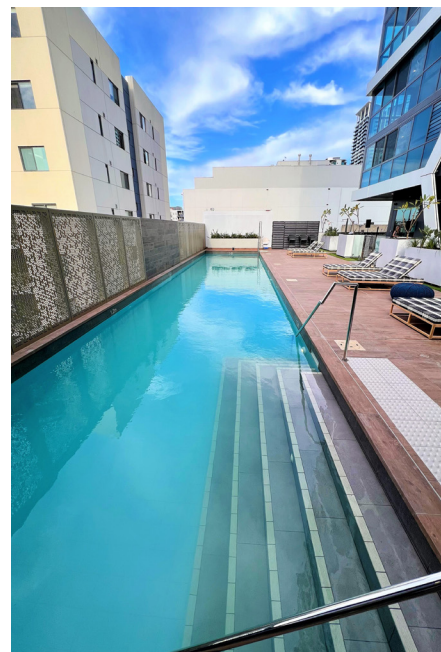
The second system was designed for all other wet/ dry areas, such as balconies, showers/bathrooms, main walkways, living and external areas. For this system, Dribond Construction Chemicals selected Flexible Sealer for the waterproof membrane in the wet areas (0621p) and Monoflex tile adhesive (0631p), which are also commercial grade products.

The adhesive and waterproof membrane have excellent properties which suited both internal and external areas. By dividing the adhesives into two different systems, Dribond Construction Chemicals was able to provide a

comprehensive solution that met all of Hanssen's needs.

Results:

Dribond Construction Chemicals was able to deliver the exact tiling system required by Hanssen, the products were in stock and there were no delays in the project. The adhesives provided excellent bonding properties and accommodated the varied temperature range experienced in Perth. The tiling system met all Hanssen's needs and exceeded their expectations.



The first system was used for the swimming pool area

Builder/Contractor: Hanssen
Photography: supplied by Dribond



Rooftop entertainment area with panoramic views



0473p DRIBOND CONSTRUCTION CHEMICALS acoustic floor underlays
0621p DRIBOND CONSTRUCTION CHEMICALS waterproofing - wet areas
0631p DRIBOND CONSTRUCTION CHEMICALS in ceramic tiling

www.constructionchemicals.com.au

Wonthaggi Hospital Expansion, Wonthaggi, VIC



The Wonthaggi Hospital expansion project was a significant project undertaken by the Department of Health & Human Services. The project aimed to expand the hospital by constructing a new three-story building to provide better healthcare services to the growing population of the Bass Coast Shire and South Gippsland regions. The new building includes an emergency department, operating theatres, medical imaging, inpatient wards, and outpatient services.



Integrated Tactiles installed at Wonthaggi Hospital drop off/pick up zone

Requirements

The Wonthaggi Hospital project team faced several challenges, including the safety of the external areas and fire exit stairwells. DTAC was contracted to address and provide a tactile solution for the external areas of the project to meet NCC compliance and ensure the safety of the hospital's occupants.

The fire exit stairwells required a TGSI (tactile ground surface indicators) and

stair nosing solution to ensure the safety of the occupants in case of an emergency.



A close up of the drop off/pick up zone

Approach

DTAC supplied and installed Black Top Integrated Tactiles (DIT0040) to the pedestrian crossings and along the patient drop off/pick up zones. Integrated Tactiles are a series of raised dots attached to a metal plate that provides a detectable warning surface to indicate a change in floor level or direction. They are designed to

provide a warning to people with visual impairments and to help them navigate safely.

To address the safety concerns of the fire exit stairwells, DTAC installed their black Pemko® Urban stair edging (DE0700B) and Black Top Integrated Tactiles (DIT0030 – 300x300). Stair Edging (Nosing) is a profile that is attached to the edge of a stair tread to provide additional grip and visibility. The installation of stair nosing to the fire exit stairwells helped to meet the NCC requirements and safety standards.

The installed DTAC products have been tested and certified in accordance with the NCC to AS 4586 for slip resistance and AS 1428.4.1 / AS 1428.1 for luminance contrast.

Results

By installing DTAC Integrated Tactiles and Stair Nosing, the project was able to meet the strict safety standards and building requirements to achieve compliance. The Wonthaggi Hospital expansion project was completed successfully, and the safety of the occupants was improved by reducing the risk of slips and falls.

Client: Department of Health & Human Services

Builder: Kane

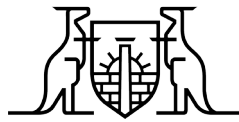
Consultants: Lyons Architecture

Photography: Dianna Snape



Integrated Tactiles installed at Wonthaggi Hospital pedestrian crossing

The Australian Institute of Architects is proud to be a founder and owner of NATSPEC and continues to endorse the NATSPEC National Building Specification. NATSPEC, a not-for-profit organisation, maintains the national and comprehensive master specification on behalf of the Australian industry, with input from many of the Institute's members, and reflects the latest national regulations and standards. NATSPEC's regularly updated information reduces the risk of expensive litigation for designers and improves the communication with builders.



**Australian
Institute of
Architects**



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We're proud to be home to some of Australia and New Zealand's most recognised and trusted brands, including Dulux, B&D, Fosroc, Porter's Paints and Cabot's.

Dulux supports Specifiers to bring their vision to life. Our world-class chemists ensure we continue to be first-to-market with products that respond to emerging construction and maintenance requirements. www.dulux.com.au



Envu was founded in 2022, a new company built on years of Bayer Environmental Science experience, for the sole purpose of advancing healthy environments for everyone, everywhere. We offer dedicated services in Professional Pest Management including our Kordon Termite Management System. www.au.envu.com



ESCEA is a New Zealand owned and run company that designs fireplaces for a demanding market. Design flexibility is at the heart of the ESCEA philosophy, allowing the Architect, Designer or home owner to meet the design intent within their project.

ESCEA fireplaces are known for their smart innovation and beautiful design. An ESCEA fireplace fits just about anywhere inside or outside your home. www.escea.com/au/



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WA Museum Boola Bardip, Perth CBD, WA



A striking blend of old and new, WA Museum Boola Bardip integrates a major heritage restoration with a new, state-of-the-art building.

Specification support and product supply from Dulux Construction Solutions extended across the project, from commencement in 2016 to completion in 2019.



Hackett Hall

Requirement

Dulux Construction Solutions brings a creative, consultative and collaborative approach to heritage projects. At WA Museum Boola Bardip, diverse coatings and product solutions were required to protect and enhance the mix of heritage and new elements.

Dulux Construction Solutions partnered on the initial specification with architects Hassell and OMA, builders Multiplex and applicators Mandurah Painters and Decorators. Our team also consulted extensively with WA's Department of Planning, Lands and Heritage to ensure all products and solutions met heritage requirements.



The New Museum for WA

Challenge

The initial specification for the project evolved considerably as the building's history and original construction story was revealed. Solutions were required to address issues as they presented, including rising damp, water table leaching and the extensive, historic application of lead paints.

The project's key challenge was its heritage status. Preserving original substrates (including sandstone) and replicating heritage finishes added significant complexity. Other challenges included managing the impact of the design's extensive use of light installations and reflective glass, as well as the fact that the museum's high touch surfaces require constant cleaning.

Solution

Dulux Construction Solutions is uniquely placed to partner on large-scale projects requiring diverse and responsive solutions. Project stakeholders valued our breadth of product offering, technical capability, comprehensive product and system testing (including testing of all substrates and original coatings), responsive service and expert advice.

Products and solutions that were tailored and delivered across the project lifecycle included:

- Specialty paints suited to heritage substrates.
- Matt decorative coatings for

high touch surfaces in reflective environments.

- Timber coatings for both new and heritage exterior and interior timbers.
- Waterproofing systems for street level external walkways.

Our major accounts and specification manager efficiently coordinated product selection, testing and supply directly through Dulux Decorative, Porter's Paints, Fosroc ANZ and Intergrain Trade & Industrial.

Regular on-site support and advice, as well as prompt product supply (thanks to local manufacturing and supply chains) contributed to the project's overall success.

Results

Across the vast spectrum of Dulux products used on this project, there were several standouts. The application of Dulux Wash&Wear Matt to class 5 interior gyprock walls helped reduce glare and reflection, while providing the long-lasting, low VOC, washable surface this public space required.

A Porter's Paint system of Porter's Limeproof Undercoat Sealer and pigment-rich Porter's Lime Wash was applied to much of the project's sandstone. This system was sympathetic to the heritage substrates. On areas where moisture transfer was an issue, Porter's Lime Wash was used direct to substrate.

The waterproofing of the above deck podium concrete walkways and concrete pavement was achieved via the application of Fosroc Proofex 3100 HDPE rolls.

The Dulux Construction Solutions team leverages deep expertise to support architects, interior designers, builders and engineers to design and build with confidence.

Architects: Hassell and OMA

Builder: Multiplex

Applicator: Mandurah Painters and Decorators Pty Ltd



Seasons Brookwater Townhouse Development, Brookwater, QLD



The project was carried out for a multi-residential property, consisting of 68 dwellings, some duplexes, in a high-risk termite zone in Brookwater Queensland. The developer had experienced termite infestation in previous projects and was looking for a long-term solution to protect the properties from future termite damage. Kordon was selected for this project, as it is a market leading product and is installed by a network of highly trained and accredited installation companies.



Kordon system installation to service penetrations to a waffle pod slab pre pour

Cureall Pest Control, based in Brisbane was assigned the task to project manage and install the Kordon Termite System.

Kordon Termite System is manufactured in Australia, by Envu. Kordon has a market leading warranty structure, the 'Envu Protection Warranty' which covers any form of termite entry and damage caused by termite infestation.

Requirement

The main requirement was to install a termite management system, that would provide long-lasting protection against termite infestation and satisfy the requirements of AS 3660.1. The system also had to be environmentally friendly, and not pose a health risk to the occupants of the property. Property owners also want peace of mind, with a system that is easily maintained and does not require on going future treatments.

Approach

It was decided that the Kordon Termite System is the best option for the project. The Kordon Termite System is a physical management system that is designed to prevent termites from entering a building. The system is made up of a sheet of laminated flexible material that is impregnated with deltamethrin, a synthetic pyrethroid insecticide. The product is installed in accordance with manufacturers specifications, inline with AS 3660.1 and is CodeMark certified.



Kordon system installation for cold joint protection to adjoining slabs pre pour

The Kordon Termite System was installed during the construction process, plumbing & service penetration protection was installed prior to concrete slab pours. Cold joint system installation was installed between any abutting concrete slabs.

Perimeter protection was then installed prior to frames being erected, this will ensure that visual inspection zones are established and can be maintained around the perimeter of the structure, this is to allow an annual timber pest inspection to be carried out.

Results

The Kordon Termite System provides an effective solution against termite infestation. The system is maintenance free, although, annual inspections are required to maintain the warranty.

Australian Standards also recommend that any premises should have a timber pest inspection carried out at least every 12 months and more frequently in areas of high termite pressure.

Benefits

The Kordon Termite System is designed & made in Australia for Australian conditions, Kordon was developed in the late 1980's, has been extensively trialed in the harshest, most high-pressure termite conditions in our country.

3rd party trials, in conjunction with the CSIRO have been conducted, ensuring the highest quality testing regime. Kordon has an industry leading warranty, a life expectancy of over 50 years, is maintenance free and does not pose a health risk to the occupants of the property or the installation process. The Kordon Termite System is a cost-effective solution that provides peace of mind to the homeowner, knowing their property is protected against termite infestation.



Kordon system perimeter installation prior to frames being erected

The Kordon Termite System is also environmentally friendly, as it does not involve the use of hundreds of litres of chemical being injected into the environment surrounding the structure.

Architect: Tim Stuart Architects

Building developer: Azure

Kordon Installer: Cure All Pest Control

Tasman Hotel, Parliament Square, TAS

escea.
FIREPLACE COMPANY

Located in Hobart's artfully refurbished Parliament Square, the Tasman Hotel is one of Tasmania's most historic buildings, incorporating 180 years of architecture.



The Printing Room features sandstone walls, windows, and Escea's DF960 Gas Fireplace

Sydney-based firms FJMT and Joseph Pant Design Consultants collaborated to introduce a common thread for the hotel's refurbishment using native Tasmanian materials. FJMT Principal David Haesler says the firm's design approach was first to reveal and restore the site's "valuable fabric" by removing unsympathetic additions and open it up to public access and enjoyment.

The incorporation of gas fireplaces into the design was important not only to restore elements of the hotel's original

story, but to bring the comfort of flame, hearth, and home into the hotel.

Challenge

Designing the flue system for many of the fireplaces presented a complex challenge, as preserving the very tall, historic chimneys was a non-negotiable factor in keeping the time-honoured aesthetic of the building.

Approach

Escea responded to this challenge by reviewing primary testing data to confirm the solutions offered would conform. Escea's commitment to product support proved to be the defining factor in the project's success as no other product could match the required specification, along with their Direct Vent Power Flues which have very few limitations, and the flexibility to be run in any direction, from just 600mm to 40m long.

"Meeting code requirements for flue locations and penetration, as well as a Zero Clearance rating that offers the widest range of surround materials was important, and Escea was able to meet these requirements with a wide range of architectural models, specification sheets, design guides and on-call architectural support – while also providing onsite management."

– Richard Miller, Escea Fireplace Company Architectural Advisor

Rosetta Plumbing's Robert Pearhouse liaised with Escea to ensure the fireplace installations could be achieved to brief. "The entire team at Escea were brilliant to deal with," Pearhouse said, "from expert product knowledge to the custom flue design, no challenge was too much for them."

Results

The hotel was updated with modern, innovative gas fireplaces with room sealed burning chambers which tick all the boxes for authority consent as they are safe, reliable, and cannot spill gas by-products into the space.

25 different models of Escea DF & DS Series fireplaces were used in different configurations over the public and private areas of the hotel, resulting in a variety of design features to complement the rich design history of the building itself.

The zero-clearance cool wall firebox design of the Escea fires allowed for a variety of cladding types to be used. Installation styles were selected from the wide range of technical details, reducing the element of design risk significantly and allowing a greater creative response to each of the spaces. The overall result added to the charm of refurbished rooms while allowing for fresh design in the new additions.

"Escea were the perfect choice of gas heater for this iconic, award-winning hotel, as a design and construct project we could not have asked for a better partner than Escea." – Robert Pearhouse.

Architect: FJC Studio (formerly FJMT)

Heritage Advice: Design 5

Construction: Vos Construction

Interior Design: Joseph Pang Design Consultants

Fireplaces Supplied by Hunts Heating and installed by Rosetta Plumbing

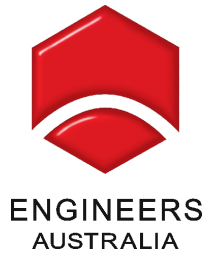


Escea DS1900 Double-Sided Gas Fireplace in the Tasman Hotel's Lobby



0737p ESCEA fireplaces

www.escea.com/au/



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Romilly Madew AO, CEO Engineers Australia



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Industrial Warehouses, Brisbane Airport, QLD



Ezi-roll demonstrated its expertise in delivering exceptional roller shutter solutions for two side-by-side industrial warehouse buildings at Brisbane Airport. Developed by Brisbane Airport Corporation and built by Xenia Constructions, the project features a total of 16 Ezi-roll roller shutters across both buildings, providing secure and functional access for their tenants.



Ezi-roll Roller Shutters

Requirements

The first building was purpose-built for BSR Group and required five larger and five smaller sized roller shutters. Each shutter was powder coated in shale grey finish, adding to their durability and aesthetic appeal. The large shutters measured 5000mm (h) x 5000mm (w). Four of the smaller shutters measured at 3000mm (h) x 3300mm (w) and one measured at 3000mm (h) x 3000mm (w).

In the second building, occupied by Schneider Electric, six standard Ezi 115 roller shutters were installed. These shutters were powder coated in shale grey and measured 6000mm(h) x 6000mm (w).

The scope of work involved providing roller shutter doors that complied with FM Global requirements, ensuring the highest level of safety and functionality for these industrial warehouses. Ezi-roll's standard 115 shutters met these specifications, offering reliable, secure, and efficient access solutions for Brisbane Airport's latest tenants.

Approach

Brisbane Airport Corporation engaged Solution Positive Architecture Pty Ltd (SPARC*) as the architect responsible for the project's design. Their collaboration with Ezi-roll and Xenia Constructions resulted in two successful developments which not only met the functional needs of the tenants but also showcased the aesthetic and practical advantages of Ezi-roll's roller shutters.

Xenia Constructions opted for Ezi-roll as their preferred roller shutter supplier due to their well-established reputation as a roller door contractor with a history of successful projects. Ezi-roll's efficiency and professionalism are evident in their ability to execute on-site work promptly, ensuring minimal disruptions to the construction process. This streamlined approach sets Ezi-roll apart, as they consistently deliver high-quality results without causing delays or hindrances to the overall project.

"Ezi-roll's excellent products and outstanding customer service make the tender process seamless and stress-free." – Xenia Constructions.



Ezi-roll shale grey roller shutters at Brisbane Airport

Results

Located at 4 Da Vinci Boulevard, Brisbane Airport, these developments exemplify Ezi-roll's commitment to delivering the highest quality roller shutter solutions for industrial warehouses. The company's emphasis on product excellence and customer satisfaction has solidified its position as a preferred supplier for many construction projects.

Ezi-roll is proud to have partnered with Brisbane Airport Corporation, Xenia Constructions and SPARC* on this project, further cementing its reputation as a reliable roller shutter provider.

Architect: Solution Positive Architecture Pty Ltd (SPARC)

Developer: Brisbane Airport Corporation

Builder: Xenia Constructions



Ezi-roll's roller shutters for BSR Group Warehouse at Brisbane Airport



Bundanon Art Museum, Illaroo, NSW



Rising from the undulating landscape in Bundanon near Nowra, New South Wales, sits an intriguing structure – part trestle bridge, part rural shed. The striking building forms part of the Bundanon Art Museum, which was constructed on land that renowned Australian painter, Arthur Boyd and wife, Yvonne, gifted the nation in 1993.



ARAMAX® is proving a popular choice in commercial buildings

New works at the property comprise site infrastructure and two buildings – the Art Museum which houses the Bundanon Trust's \$46 million collection of Arthur Boyd artworks, and 'The Bridge'. The Bridge is a creative learning centre for school children suspended high above the flood prone gully below.

The project was conceived by Kerstin Thompson Architects (KTA), who carefully balanced aesthetics with the need to deliver buildings that would resist both floods and bushfires. KTA Architect, Lloyd McCathie said the design brief called for the realisation of the client's purpose: to foster an appreciation of art in the landscape in

line with Arthur Boyd's vision.

The Solution

"The design addresses how buildings and landscapes can be resilient and resistant," Lloyd said.

"Both structures needed to be resistant to fire and resilient to flood, wind, and sun; in particular The Bridge (a 165-metre-long by a 9-metre-wide structure), where in the spirit of Boyd's practice of painting 'en plein air'; climate variation is central to visitor experience." Fielders ARAMAX® was the roofing material of choice for The Bridge, where its rigidity, long-spanning qualities and low maintenance benefits came to the fore.



ARAMAX® roofing was specified with an unpainted ZINCALUME® steel finish

"The ARAMAX® roof with its clear spans over The Bridge, functions as a parasol, shading the breezeway spaces and accommodation rooms which have their own independent roofs below, while allowing air flow and views of the landscape along the length of the Bridge," Lloyd explained. "The long

spans of ARAMAX® also removed the need for additional structural steel framing.

"The roof was deliberately lifted above The Bridge allowing light and air penetration into the spaces below – the profile of the elevated ARAMAX® cuts a datum across the site, registering the roof against the landscape.

As well as helping meet the project's design vision, ARAMAX® delivered the required BAL performance and general low-maintenance qualities.

"ARAMAX® was selected for its robustness, resilience and longevity in the context of a remote, flood and bushfire-prone environment. Low maintenance, integrated colour materials were selected to reduce reapplication of finishes over time," Lloyd explained.

"Being located in a bushfire prone area, The Bridge was required to be BAL29 – as a parasol room, the ARAMAX® needed to be non-combustible."

The Process

Working closely with Fielders ensured the ARAMAX® cladding was supplied in the most efficient way possible. Where site conditions permit, ARAMAX® can be manufactured on-site and rolled directly to the roof structure utilising Fielders' Mobile Mill technology. However, for this project the topography made this unviable, so Fielders manufactured the ARAMAX® sheets off-site to exact lengths, ensuring fast and efficient installation without onsite adjustment.

The successful application of Fielders ARAMAX® has also led KTA to evaluate its use for several of the consultancy's new projects.

Architect: Kerstin Thompson Architects

Builder: ADCO Constructions

Photographer: Aran Anderson Photography



The ARAMAX® roof meets the BAL requirements of this bushfire prone region



0311p FIELDERS KingFlor® in concrete formwork; 0341p FIELDERS SlimFlor in structural steelwork
0423p FIELDERS roofing - profiled sheet metal; 0424p FIELDERS roofing - specialised sheet metal
0436p FIELDERS cladding - profiled sheet metal; 0437p FIELDERS wall cladding - specialised panels

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Curtin University, Bentley, WA



FLOORING SYSTEMS

The new building for Curtin University, School of Design, and the Built Environment was designed by Wardle studio. Sustainability and community were at the heart of the project brief.



Open, informal spaces where collaboration can flow freely and inspire creativity through social learning

The design responds to the ever-changing and evolving nature of learning spaces, while incorporating biophilic principles. The building creates a comfortable learning environment that encourages more movement and informal spaces for collaboration and overall user wellbeing. Students are also encouraged to interact with research, commercial and retail tenants included in the design.

The Greater Curtin Master plan was recertified from a 5 Star Green Star Communities rating achieved in 2015 to a 6 Green Star Communities rating in 2020 or World Excellence.

Requirement

With sustainability and biophilic design principles being the central driver for material selection, Marmoleum, Forbo linoleum flooring was a natural choice – a truly sustainable option made of plant-based materials. Marmoleum is climate positive from cradle to gate, eliminating the need for offsetting and offering a solution to reducing embodied carbon. Additionally, every m² installed contributes to native habitat regeneration in WA, via Forbos partnership with Carbon Positive Australia.

For over 25-years Wardle and Forbo have worked together on numerous

large education projects. Wardle have always favoured using authentic and original materials. Jeff Arnold, Senior Interior Designer at Wardle, explains why Marmoleum was used as a material of choice.

“The Marmoleum flooring provided an elegant foreground to our preferred palette of native timbers, in situ and precast concrete, open ceilings, and acoustic linings. We love its grey saturation, its low-sheen surface, and the way it can flow from floors to stairs and onto walls.



Learning settings seamlessly merge individual study and shared spaces that cater to various learning styles

Approach

For the Curtin School of Design and the Built Environment, we selected Vivace “Cork Tree” for its grey-brown mineral tones. The Cork Tree is used monolithically on a large central corridor and staircase and a grand terraced breakout space at the base of the southern void.

In combination with a dynamic slotted blackbutt timber veneer ceiling, the floor frames vertical fields of colour – shimmering oxide red cable balustrades, anthracite-coloured acoustic panelling and Forbo “Lettuce Green” bulletin board.

Teaching studios with large pivoting entry doors are lined with Marmoleum Slate - Lakeland Shale, flooring, this time with grey-green-ochre saturated mineral tones. The textured linoleum surface of the shale provides a subtle counterpoint to the more traditional Marmoleum surface appearance.

Results

An art installation by Janet Laurence floats Western Australian mineral samples across the full height of a majestic concrete void wall, pulling it all together. As well as the impressive green-star credentials of the linoleum, we really like the way beautiful colours and organic patterns play on the eye, whether up close or far away, looking down into the various void spaces from above. Each Forbo colourway is a work of art, making our job a real pleasure!” states Jeff.

While carbon impacts from manufacturing are important, so are the manufacturing process and material end of life options. The production process and supply chain for Marmoleum, Furniture Linoleum and Bulletin Board are SA8000 certified, ensuring responsible labour standards are met. End of life recycling options are available including recycling into new floor products.



Student-centred teaching spaces created with flexibility. These areas provide a space for students to focus, collaborate, communicate, and even socialise

Benefits

Marmoleum is a proven long-term investment due to its hard-wearing wood-based ingredients that continue to harden over time, has natural bacteriostatic properties, is allergy friendly, low in emissions, and, best of all, is free from plastic.

Architect: Wardle (formerly John Wardle Architects)

Builder: Lendlease

Flooring installer: Masterfloors

Photography: Dion Robeson



0651p FORBO in resilient finishes

www.forbo.com/flooring/en-au/

Parramatta Aquatic Centre, Sydney, NSW



A low-rise design built into the landscape; the Parramatta Aquatic Centre integrates with its parkland surrounds. Grimshaw Architects' specification team called on Fosroc ANZ for a waterproofing solution for the single-level building. It houses two indoor pools and a water playground: steam, spa and sauna facilities plus a gym, cafe, and multipurpose community spaces.

With high exposure to chemicals and water, the pool pump rooms needed a very hard-wearing, non-slip floor surface. The roof required protection from water, soil, and UV exposure. The designers were also seeking a non-reflective finish to avoid impacting nearby residents and motorists.

The Solution

Fosroc Polyurea WHE110 was selected to waterproof both surfaces. A hybrid polyurea-polyurethane elastomeric waterproof membrane was an ideal choice for Grimshaw Architects', due to its efficiency, versatility, and long lifecycle. Comprised of 100% solids, the product provided both waterproofing and a protective coating.



Spray application of Polyurea WHE110

A topcoat of Fosroc Nitoflor PA provided slip resistance and extra resistance to chemicals, abrasion, and UV. A two-component solvent-free polyaspartic coating, Fosroc Nitoflor PA was applied as a topcoat over correctly prepared concrete.

The Benefits

Polyurea WHE110 creates a seamless and monolithic surface that is both waterproof and protective. It significantly enhances the durability of reinforced concrete due to its low permeability, high durability, excellent chemical resistance, abrasion and UV resistance (although some discolouration may occur). The coated substrate could be put into service within an hour due to its fast spray application properties, and it has very low VOC.

Nitoflor PA was used to provide additional resistance to chemicals, abrasion and UV. It is also solvent free, fast curing and provides slip resistance.

Architect: Grimshaw

Client: City of Parramatta

Contractor: Sure Projects Australia (SPA) & Lipman



Finished pump room



0411p FOSROC waterproofing - external and tanking
0621p FOSROC waterproofing - wet areas
0657p FOSROC resin based seamless flooring

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Denita Wawn, Chief Executive Officer, Master Builders Australia



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Australia's first family of paint. SINCE 1935

Haymes Paint is Australia's largest locally owned and operated, NATA accredited paint manufacturer. Since 1935, the Haymes family have proudly crafted innovative colours and coatings that continue a tradition of never taking short cuts on quality.

The Haymes Paint range includes Green Star compliant surface coatings, providing a single source solution including sustainable protective coating, timber finishes, texture and render, on top of their nationally accredited Ultra-Premium paints. www.haymespaint.com.au



Hilti is a world leader in the design and manufacture of cutting-edge technologies, software and services for the professional construction industry. Every day our technologies support awe-inspiring feats of engineering around the world – from the famous bullet train in Japan, the new built Perth stadium or Sydney iconic Barangaroo just to list a few. We offer a 360 degrees service for construction – acting as a true partner for our customers. www.hilti.com.au



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Melbourne City Baths, Melbourne CBD, VIC



Australia's first family of paint. SINCE 1935

The Melbourne City Baths has been a landmark in Melbourne's CBD since the 1860s. For more than 160 years, they have serviced the local population in many ways – from its original use as a bathing house, to its later revival as both a historic site and a wellness centre.



Haymes Paint Ultra Premium Solashield Exterior was used on the external precast elements, and expertly colour-matched to look as good

In 2019, the City of Melbourne began a major refurbishment of the historic site with the help of over 60 trade specialists to restore the site to its former glory.

Haymes Paint proudly played an essential role in the restoration project – which took three years to complete – providing its extensive product knowledge and expertise in colour matching to preserve the building's heritage.

Requirement

Due to the heritage significance of the building, the building's heritage needed to be preserved and protected, and the colour palette selected needed to hold true to the building's characteristics. Haymes Paint was recruited specifically for refurbishing Melbourne City Baths' pool areas, roof areas and external precast.

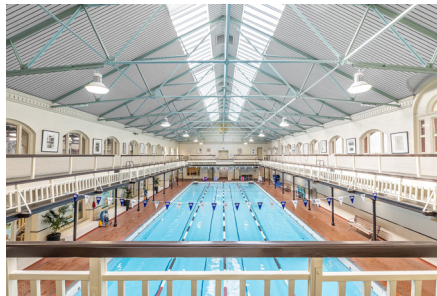
Approach

The internal walls, trim, doors, railing, and ceiling battens in the pool area needed a generous coat of paint, while the external roof shingles and precast features required a strong and highly durable coating to protect them from the elements.

At the core of this project was ensuring

that all refurbishment works preserved the existing heritage features of the building, which called for precise attention to detail and specialist knowledge – all of which the Haymes Paint team provided.

The Haymes Paint team brought multiple unique skill sets to this project, and perhaps none more so than its specialist laboratory-assisted colour matching.



The handrails, balustrades, slatted ceiling boards and internal broad walls were all painted using a variety of Haymes Paint products

Importantly, Haymes Paint was one of the first paint manufacturers to recognise the heritage colours of Australian architecture and developed a range based on British and Australian standard colours. Having knowledge and experience using this dedicated Heritage Colour range ensured the team came into the project with specialist knowledge and skills to undertake the colour matching. The heritage status of Melbourne City Baths – an Edwardian Baroque building – meant that getting the right colour was critical, ensuring its traditional features were preserved. The age of the building meant the colours were within the 'Munsell' colour palette.

Solution

Following several initial on-site consultations, Haymes Paint collated all relevant information and provided on-site sample panels for both the Architect and Heritage Architect to approve.

Once the exact colours were finalised, Haymes Paint – and Western Painting – commenced the application.

This level of collaboration was essential to ensure any refurbishment works stayed true to the building's existing heritage and style.

For the interior walls, a water-based enamel paint, Haymes Paint Ultra-Premium Ultratrim (Semi Gloss) was used. Given the walls were part of the enclosed pool area, it was the perfect option as the product can absorb more humidity and moisture than other paint types. Additionally, the paint's tolerance to damp areas means the surface didn't need to be completely dry before application. As for the ceilings, Haymes Paint Ultra Premium Expressions (Low Sheen) was applied, which is ideal for wet areas and protects against mould and mildew.



For the external structures, highly durable Haymes Paint products were used on the historic building's roof shingles and external precast elements. The roof shingles posed a particularly challenging part of the refurbishment, as each had to be handmade by an artisan craftsman to match the original shingles. To protect the shingles Haymes Paint Ultra Premium Solashield Exterior (Satin), was chosen as it provides ultimate protection due to its highly UV and mould resistant coating. Adding to its already impressive durability, Solashield easily adheres to surfaces, making it perfect for the job. The precast elements were also treated in a Low Sheen finish of Solashield.

Architect: Loretta from Cassisi Architects

Heritage Architect: Arthur Andronas from Andronas Conservation Architecture

Builder: Eastern Property Services

Painter: Western Painting

Queen's Wharf, Brisbane CBD, QLD



Queen's Wharf is a multipurpose development in Brisbane's CBD that incorporates a variety of facilities, including hotels, restaurants, retail and residential. The development will provide around 1,000 hotel rooms and 1,500 residential apartments, distributed among four hotels and two residential towers. Additionally, it involves the restoration and protection of nine heritage buildings, as well as the establishment of public spaces, a variety of entertainment experiences, and a pedestrian bridge to South Bank. Hilti has partnered with Cree8, one of the partition and ceiling contractors responsible for working on the internal walls of Towers 2 and 3. These towers specifically accommodate The Star Grand hotel. Cree8 engaged Hilti to provide assistance with the passive fire protection for the top track of the plasterboard walls.



Queen's Wharf project overview

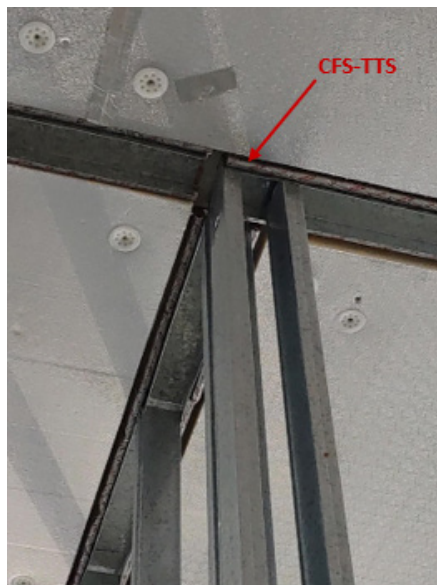
Requirement

The top floor (L17) with plantroom above required separating walls with under slab insulation and there were two main challenges:

- Installation access and quality: The traditional method of installing passive fire protection on top of partition walls can pose challenges when under slab insulation is necessary, as access to the top track is often limited. In this particular level, where insulation boards were 60 mm thick, it would be necessary to leave a sufficient gap between the wall frames and the boards to accommodate the injection of firestop sealant. To finalise, an additional layer of insulation was required to close the resulting gap.

Therefore, the constrained space available for applying caulking can lead to potential quality issues that may undermine the effectiveness of the fire protection solution.

- Fire and acoustic compliance: traditional solutions, such as Hilti's CP 606, can comply with the relevant standards, although there are risks related to installation quality, therefore if new solutions were proposed, they would also need to comply with AS 1530.4:2014 and AS 4072.1:2005 for fire and the NCC requirements for partition wall sound reduction.



Hilti's CFS-TTS installed above the partition wall frames

Approach

Understanding these as continuous challenges in the industry, Hilti's local team approached Cree8 with the Top Track Seal CFS-TTS solution. They collaborated with Cree8, design consultants, and Multiplex to ensure a successful implementation on some fire rated walls to L17 of both towers.

Hilti's engineering team provided technical expertise, on-site support, project specification assistance, supporting documentation, approvals, trials, and installation training. The CFS-TTS solution is included in Hilti's

branded worksection with NATSPEC, reinforcing its credibility.

Results

The use of the preformed firestop device, the CFS-TTS, offers significant improvement compared to traditional caulking methods. One notable advantage is that it effectively allows both the firestop and the top frame of the partition wall to be installed in a single step, eliminating the need for post-insulation sealant injection and saving time.

Furthermore, the CFS-TTS system underwent local fire testing in accordance with AS 1530.4:2014 and AS 4072.1:2005 standards. Additionally, the system went through a full-scale acoustic test following ISO 10140-2:2010, demonstrating its capability to meet sound reduction requirements. These results validate the performance and compliance of the CFS-TTS system required in the project.

Benefits

Approval from all parties involved was obtained after submission of technical documentation, as the CFS-TTS not only met all the design requirements but also offered installation reliability and productivity, thanks to its straightforward and efficient application process.

The proposed solution also had a positive impact on other aspects of the project, including health and safety, with the elimination of overhead caulking reduced potential risks of using scissor lifts or ladders and sustainability, as the CFS-TTS has lower VOC (Volatile Organic Compound) content when compared to traditional sealants.

Architects: Cottee Parker

Builder: Multiplex

Partition walls subcontractor: Cree8

Photography: Supplied by Multiplex and Hilti



0181p HILTI anchors
0182p HILTI in fire-stopping

www.hilti.com.au

Arcadis Offices, Melbourne CBD, VIC

HIMMEL[®]
INTERIOR SYSTEMS



Global sustainable design and engineering firm Arcadis sought to embrace new post-Covid ways of working for their new Melbourne office.

Requirement

Arcadis needed a modern, efficient design which also made a statement on shifting the focus from where they work to how they work together. Located in an iconic Melbourne building on the corner of Queens and Collins, the design needed to pay homage to the stylistic sensibilities of the skyscraper.



Himmel aluminium A series 104 partition suite in black

Approach

Contractor Alirock enlisted the services of Himmel Interior Systems to help bring their concept to life. Anchored around a stunning kitchen area, the

office needed a variety of open plan hot desks, communal workspaces, and private meeting rooms.



Corner room framed by AS104 partition suite

To foster a sense of flow around the office, the corners of the central meeting room featured rounded corners. To realise this design feature, Himmel U Channel was bent to accommodate the installation of the curved glass.

Gyprock's dependable 13mm plasterboard lined the walls and corridors of the transitory spaces in between meeting rooms, which used Black AS104 partitioning paired with black Himmel Flat Bar Aluminium Skirting to segment and frame the abundant meeting rooms throughout the space.

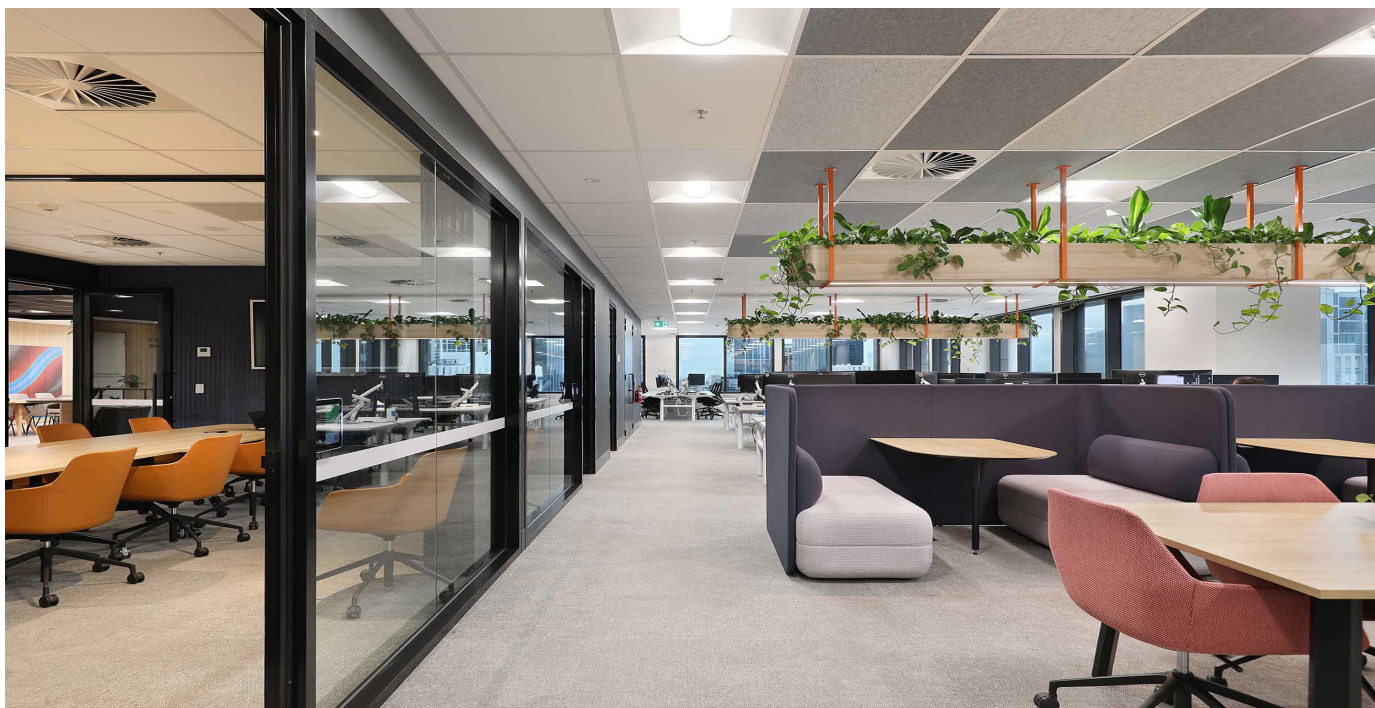
Results

Alirock took full advantage of Himmel's Commercial office fit out solutions to realise their innovative designs, delivering Arcadis a modern office space which perfectly synthesised form, function and comfort.

Architect: Geyer Architects

Contractor: Alirock

Builder: Valmont



AS104 suite separating meeting room from common work spaces



KINGSPAN INSULATED PANELS is the world's largest and leading manufacturer of high-performance insulated panel building envelopes. Its wide range of products manufactured in their Australian facilities include insulated wall and roof panels, high performance standing seam systems and façade solutions. KINGSPAN INSULATED PANELS is widely recognised in the industry for the high quality and performance of its products as well as its commitment to excellent customer service and technical support. www.kingspanpanels.com.au



Kingspan Insulation is a world-leading manufacturer of innovative, high performance insulation products for roof, wall and underfloor applications in residential, commercial and modular buildings which help reduce the carbon footprint of the built environment. Kingspan Insulation manufactures AIR-CELL®, the region's leading thermo-reflective insulation brand and Kooltherm®, a world-leading CFC/HCFC-free rigid thermoset insulation with zero Ozone Depletion Potential (ODP).

Kingspan Insulation's technical experts can provide thermal solutions for Section J, Green Star and NatHERS Star rating. www.kingspaninsulation.com.au



Lawn Solutions Australia is an Australian owned and operated business with Australia's leading group of turf growers coming together to offer a range of exclusive turf brands and turf products across a comprehensive national network.

Lawn Solutions Australia is setting a new benchmark for best practice in the turf industry with the industry-leading accreditation system, AusGAP. All Lawn Solutions Australia producers are AusGAP certified and adhere to the same stringent, nationally endorsed quality standards. www.lawnsolutionsaustralia.com.au



Leviat, a CRH company, is a global leader in connecting, fixing, lifting and anchoring technology for the construction industry. We imagine, model and make engineered products and innovative construction solutions. Our engineered products and innovative construction solutions are used in a variety of market segments from residential to infrastructure, enabling users to build better, stronger, safer and faster. www.leviat.com/au-en



LYSAGHT has a proven track record supplying quality steel roofing, walling, rainwater, fencing, home improvement and structural products. Made from 100% Australian steel, our products are extensively performance-tested, come with a BlueScope warranty, and offer our customers confidence and peace of mind.

Our quality products are only part of our unique offer – our commitment to genuine, helpful customer service, and unmatched technical support and expertise has helped us become the trusted experience in steel. www.lysaght.com



MODDEX is Australasia's leading manufacturer of innovative modular barrier systems for large-scale infrastructure and non-residential construction projects. Our extensive range of pre-engineered, proprietary handrails, balustrade and barriers systems are designed for industrial, commercial and civil applications. All our systems comply with Australian and New Zealand Standards, BCA, NZBC, DDA and WHS regulations.

MODDEX can provide a complete system design, layout and specification service including CAD drawings, detailed scope of works and estimated cost breakdown. www.moddex.com





Building Success by Specifying

By Phillip Spence BDM NATSPEC

Architects, builders, contractors, designers, engineers, and specifiers play a pivotal role in shaping the built environment. Their decisions have a lasting impact on building safety, functionality, and performance therefore, it is crucial to consider conformity and compliance when specifying building products.

By selecting conformant products such as those in NATSPEC branded worksections, specifiers enhance occupant safety and minimise the risk of failures. Compliance with building codes and regulations is critical for avoiding legal complications, liability issues, and safety risks. It safeguards the interests of clients and stakeholders ensuring a high level of project integrity. With the increasing complexity of building products, it's essential to ensure that what is specified aligns with what is delivered on-site. Regular inspections and quality control measures can help mitigate risks and maintain the integrity of your projects.

NATSPEC Branded worksections provide numerous benefits, including standardised clarity, consistency in specifications, reducing the risk of costly misinterpretations during construction and ensures confidence in product quality, aligning with industry standards. NATSPEC partners with established brands, which mitigates product-related issues, safeguarding both clients and project teams.

Products within NATSPEC's branded worksections undergo rigorous compliance checks, benefiting specifiers by ensuring project quality, efficiently meeting compliance requirements, mitigating risks, and reinforcing professional reputations. Architects and designers who prioritise compliance and conformance not only safeguard clients' interests but also contribute to project success, shaping a resilient built environment focused on safety, durability, and cost-efficiency.

In conclusion, incorporating NATSPEC's branded worksections into your building specifications not only streamlines the decision-making process but also provides a trusted framework for specifying compliant and conformant products, ensuring that your projects are built on a solid foundation of quality and safety. NATSPEC subscribers benefit significantly from using branded worksections, which have proven in contributing to the overall quality of their projects. These standardised specifications ensure clarity and consistency, instilling confidence and help meet compliance and conformance requirements efficiently. By mitigating risks associated with product selection and reducing the likelihood of construction delays or disputes, NATSPEC subscribers can consistently deliver high-quality outcomes, enhancing their professional reputation within the industry.

Read what subscribers say about Branded Worksections:

GRAY PUKSAND

"Having dedicated resources to maintain, update and disseminate this information can be challenging. NATSPEC dramatically reduces the risk of missing important updates to standards and manufacturer- specific updates. For some time now, The Victorian School Building Authority have had a dedicated 'VSBA' branded version of NATSPEC, which Principal Design Consultants must use as the basis for Project Specifications." (Case Study Magazine 2021-2022) **Gray Puksand**

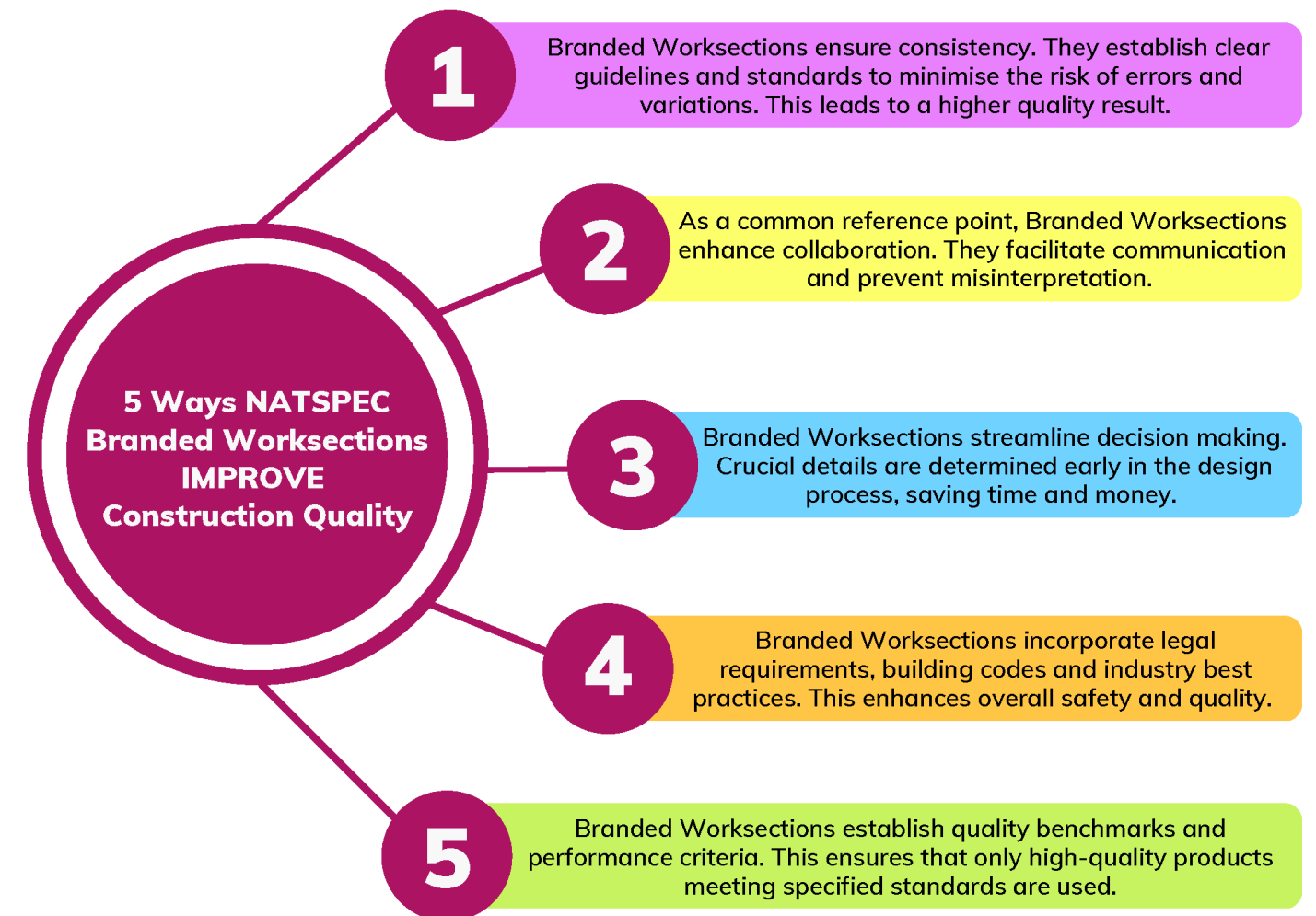
JPW

"NATSPEC promotes collaboration through the sharing of information between suppliers and designers. Where it was required in worksections, supplier-specific information and stakeholder input during the design development stages of the project was incorporated. This was further developed using benchmarks and standards to succinctly communicate to all the expected quality of the project." (Case Study Magazine 2021-2022) **Johnson Pilton Walker**

KENT LYON
ARCHITECT

"Kent Lyon Architect was able to access, download and rely on the most up-to-date worksections, including Product Partner worksections ensuring that the products available meet current Australian Standards (AS) and the National Construction Code (NCC). Risks were reduced with the product specifications being constantly updated according to the industry standard. Since establishment of our practice in 1996, we have found NATSPEC to be a reliable resource with its specific worksections that are customisable according to the specific project requirements." (Case Study Magazine 2018) **Kent Lyon Architect**

Compliant and Conformant Products



Branded Worksections Elevate Construction Quality and Efficiency through Standardisation and Communication:

- Increasing efficiency
- Promoting consistency
- Facilitating communication
- Ensuring compliance with regulations

A Branded Worksection improves construction quality through standardised processes, clear communication, compliance, and continuous improvement. It facilitates sharing instructions, aligning stakeholders, and reducing errors. Quality assurance measures, such as checklists and inspections, ensure compliance with regulations and industry guidelines. By defining and monitoring quality assurance processes, construction teams proactively address issues and minimise non-compliance risks.

The Branded Worksection serves as a centralised platform to communicate clear instructions, expectations, and requirements to all stakeholders involved in the construction project. It eliminates ambiguity and minimises misinterpretations or misunderstandings, fostering effective communication among architects, contractors, subcontractors, and suppliers. Clear and concise information shared through the Branded Worksection helps avoid costly mistakes and ensures that all parties are aligned towards achieving the desired construction quality. Through the effective use of a Branded Worksection, construction projects can achieve higher levels of quality control, efficiency, and overall customer satisfaction.

Allianz Stadium, Moore Park, NSW



Since its official opening in August 2022, Sydney's new world-class Allianz Stadium is already proving to be the perfect showcase for Kingspan's quality range of insulation products.

Requirements

With a construction cost of \$828m, the new 42,500-seat public facility is built on the site of the former Sydney Football Stadium in Moore Park, home to the Sydney Roosters, NSW Waratahs, and Sydney Football Club. Allianz Stadium and the Sporting Club of Sydney were designed by Cox Architecture, who took on the challenge of creating a world class, cutting-edge facility within this major public sporting and event precinct, providing a state-of-the-art sports and entertainment venue, and a wellness and fitness centre.



A spectacular facility built as per the NCC compliance

Anna Brown and Alex York of Cox Architecture take a deep dive into their work on the project, including the pivotal

role played by Kingspan materials.

The project features two Kingspan products – Kooltherm K10 G2 Soffit Board and Kooltherm K10 Plus Soffit Board', Anna advises.

'The K10 G2 foil-faced soffit board features extensively within the main basement level of the fitness centre and was also used in the main stadium'.

Anna and Alex's commitment to creating a visually appealing solution was a natural fit for the Kingspan products. 'Due to ceiling height requirements, we didn't want to wrap the beams that were supporting the slab in insulation', Anna explains. 'To avoid doing this, we had to increase the under-slab's performance above DTS provisions of the NCC and guidance on this was provided via a JV3 energy assessment model. By increasing the K10 insulation's thickness, we avoided having to place insulation everywhere on the underside of the structure'.

While Kooltherm K10 G2 proved to be the perfect solution in this case where there were ceilings to hide the foil base, Kingspan Kooltherm K10 Plus was used in spaces within the Fitness Facility which lacked ceilings.

Approach

Aesthetics were also a major consideration in this location, as they

were throughout. 'As there was no ceiling in the squash court, all exposed services were spray painted as part of the design of the room. For that reason, we needed a suitable insulation product that we could easily paint over to match the colour we had sprayed the services'.

Results

'We used K10 Plus over the 25-metre indoor pool, which has an outdoor deck above it,' Anna says. 'All boards were butt jointed and sealed with appropriate waterproof sealant in this pool environment, and all exposed edges were foil-covered due to the pool's high humidity and chlorine levels. This strategy also mitigated the risk of interstitial condensation forming. The K10 Plus was great in this context because we understand it to be a closed cell construction therefore doesn't absorb moisture, and there's no risk of mould developing'.

Benefits

'As well as looking great, the insulation had to meet the NCC's thermal and fire requirements', she says. 'Kingspan K10 products differ from spray-on insulation systems – because they are a mechanically fixed system, you know it will stay firmly in place, in one piece and present a smooth flat desirable ceiling surface'.

As Alex confirms, the Kingspan products performed beautifully throughout. 'I've used Kingspan numerous times on other projects, and have confidence in it', he says. 'We provided a performance specification in terms of insulation requirements at the beginning of the project. The Kingspan product range complied with the thermal, acoustic and fire requirements while meeting our aesthetic criteria'.

In this sporting centrepiece, the versatility, durability, and performance of Kingspan products speak for themselves.

Architects: Cox Architecture

Photography: Christopher Frederick Jones



A stunning public sporting and event precinct with a wellness and fitness centre



Oak Flats Roundabout, Oak Flats, NSW



Large roundabouts are a consistent hassle for council maintenance teams to manage. With any plants or grass, there is regular upkeep required for the space to be presentable as well as keeping them safe for the community and traffic.



Upgraded Sir Grange Zoysia roundabout on display

Shellharbour City Council was looking for alternative options for reducing the maintenance requirements of an existing high-traffic roundabout in the town of Oak Flats. The roundabout is centred right next to the local train station, the police station, and numerous businesses, so it is an important part of the community's infrastructure.

The roundabout previously had garden beds that required regular site visits for maintenance, around 10 times a year. When works were undertaken it required 4 traffic controllers at \$200 per hour to

manage the logistics of undertaking the maintenance while continuing traffic flow. Closing off the streets and diversions or detours were simply not an option due to the importance of the roundabout for nearby services.

Requirement

Council maintenance employees were invited to an open day at local turf business Turfco where they were educated on the different grass varieties available, and the research and development that goes into their release by Lawn Solutions Australia. It was during this open day that Council representatives were introduced to a relatively new grass variety called Sir Grange Zoysia.

After learning about Sir Grange Zoysia with its low input requirements and the benefits of being able to leave the grass left un-mowed, Council decided it was the solution they had been looking for.

Approach

This initiated a new design and project plan to upgrade the roundabout. Community consultation as to the appearance of the roundabout was also an important factor. The roundabout is a very prominent one with locals travelling past it in many cases several times a day. So, it needed to be more

than 'just another roundabout' and needed to reflect the environment and the community it represents. Locals were keen to see something green that didn't involve simply concreting it over. After much consultation, the concept was for the roundabout to become a living art piece, with pencil pines a reference to an avenue nearby and the grass mounds to the coastal headlands.

The roundabout has now been solid turfed with Sir Grange Zoysia supplied by Turfco and the result is outstanding. Council installed underground irrigation to ensure the grass was able to be watered without the need for traffic control to do so, with a sand base installed to ensure the specific preparation requirements of the grass were provided to ensure its success.

Results

Since installation, Council has only needed to undertake 6 hours of maintenance over approximately 15 months, with no traffic control measures required. With this time being spent primarily just picking up rubbish that has blown in as Sir Grange has not required mowing, not once. Fortunately, with Sir Grange, any rubbish and debris tend to sit on top of the grass without getting buried, making the clean-up process easy.

Benefits

Council is extremely happy with the result. They no longer need traffic control at the roundabout when maintenance is carried out. Council is so impressed with how Sir Grange is going they are looking at another two roundabouts in Oak Flats, along with other areas with similar conditions.

Council has received incredibly positive feedback from the local community since completion, with many locals commenting on how cool it looks and requesting that more roundabouts in the area be completed with Sir Grange as well.

Photography: Supplied by Lawn Solutions

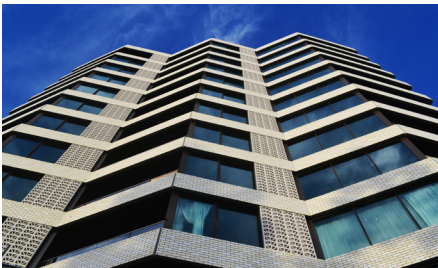


Landscaped mounds of Sir Grange Zoysia at maximum height

Kangaroo Point and Shoreline Queens Beach, QLD

Leviat
A CRH COMPANY

Contemporary new designs, sizes and colours have brought breeze blocks back into fashion, and the appeal isn't only pleasing to the eye. The shading, ventilation, light and privacy aspects brought by breeze blocks combine with a decreased carbon footprint to offer sustainability values that can make a real difference to environmental certifications.



Kangaroo Point Wind Post Completed Facade

Unsurprisingly, architects, builders and clients alike have started specifying breeze blocks for a growing range of applications both indoors and outdoors. But without proper planning, on-site realities often lead to unnecessary makeshift solutions. Much of the visual appeal of breeze blocks does derive from unbroken patterns, so any last-minute engineering is bound to compromise the overall impression.

Ensuring design, as well as structural integrity, is all about custom hidden supports such as Leviat's Ancon Windposts and reinforcement systems. The efficiency and ease of installation of these solutions were recently proven at high-profile developments in Queensland: Kangaroo Point and Shoreline Queens Beach.

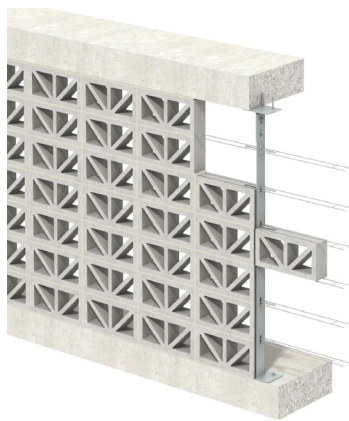
Requirement

Kangaroo Point was a pilot project that involved a 12-storey residential tower where Brickworks Ltd's Breeze Blocks represented a key facade feature. When the masonry contractor contacted Leviat, Breeze Blocks had been detailed in the structural drawings, but the client wasn't happy with the large, conspicuous steel frameworks supporting them. The brief was to come up with a solution that could keep the

main fixings to the structure hidden from sight whilst providing tolerance and flexibility.

Approach

Based on existing Leviat designs, a solution was developed in close cooperation with the client and masonry contractor to ensure a perfect fit at Kangaroo Point. But the finished system was so robust and versatile, it soon went into production for another prestigious development, Shoreline Queens Beach and other projects in the Inner Northern Suburbs of Brisbane, for which the design was further developed and customised.



Leviat Wind Post System

"The Leviat team were so receptive, flexible and innovative in helping create a solution that best worked for us, and we were grateful for the amount of adjustment that the system provided on site." - IRP Masonry

All these project-custom applications build on two key components:

Ancon WP4 Windposts

Customised to specific job requirements, Ancon WP4 Windposts enable invisible installation between blockwork. The vertical stainless-steel posts fit within the wall (which is why they are sometimes called "spine posts") and the thickness can be varied dependent on the load-bearing capacity. Loads from the blockwork are transferred to the post using the SNS Wall Ties through vertical slots that offer tolerance along the post.

Ancon AMR & AMR-X Bed Joint Reinforcement

This ladder-type reinforcement system features longitudinal wires in 304 or 316 stainless steel, offering the greatest corrosion resistance and life-cycle cost benefits. As well as the flat wire of the standard Ancon AMR, Leviat also offer the AMR-X version, which can improve speed of construction and quality of build. With Ancon AMR-X, the masonry reinforcement is simply laid directly on the masonry – shaped cross wires ensure that the reinforcement is lifted up, so that it will be wholly embedded in mortar. The combination of these two systems enabled the masonry contractors to create slimline breeze-block walls entirely in keeping with the architectural vision – and without compromising on structural integrity.



Results

The final results at Kangaroo Point were so successful, that Brickworks Ltd. have created a design guide for the strengthening of architectural breeze block walls, using these Leviat products.

Cathy Inglis of Brickworks commented, "Leviat's products tick all the boxes, both structurally and aesthetically – and the installation process is very efficient. When working with Breeze Blocks, they are a great solution."

Client: ARIA Property

Architect: Bates Smart

Consulting Engineer: ACOR Consultants

Builder: Rivi re Constructions

Photography: Jennifer Braybrook

Springfield Central Station Park 'n' Ride, Ipswich, QLD



Primarily used to support roof sheeting in commercial and industrial buildings, a recent project in Ipswich, Queensland has showcased the versatility of PERMALITE® aluminium purlins in a different application.



Lightweight PERMALITE® aluminium purlins create a vertical vein façade

The new Springfield Central Station Multi Storey Park 'n' Ride is a four storey \$55M development, which used 50 tonnes of this material, but rather than holding up the roof, these lightweight aluminium purlins have been applied as a design feature, to deliver a vertical vein facade on all sides of this triangular-shaped building.

Requirement

During the development phase, architects GHDWoodhead needed to address several complex design criteria while also meeting project cost frameworks. It became apparent that the cost of a proprietary facade wouldn't allow the team to achieve these goals within budget, so innovation was needed.

As well as being cost effective, the development by the Queensland Department of Transport and Main Roads for Queensland Rail, showcased the versatility of PERMALITE®, as GHDWoodhead Senior Designer, Joshua Rhodes, explains.

"By separating the facade criteria into different elements such as anti-throw screening, crash rails, fall protection, natural ventilation, and light spill mitigation, we were able to combine particular elements that then changed the performance criteria for other elements," Joshua said.

"By identifying overlaps and interdependencies, the batten screen's primary function was revised to mitigate light spill and address context. The anti-throw screen behind the battens provided the flexibility to increase the batten spacing as they were not required to perform an anti-fall function at 120mm centers, which is typical of most batten screens. This allowed for a greater percentage of open area for natural ventilation and light and reduced the number of battens by over 60 per cent.

"These profiles were identified as a suitable alternative to custom or proprietary facade systems based on cost and their ability to span the floor-to-floor heights," Joshua explained.

Lysaght Account Manager – Northern

Rivers / Gold Coast, Stephen Martin, said the development was likely the first to use PERMALITE® purlins this way.

"I've been in the industry for almost 20 years and have never seen purlins used like this previously, but looking at the building now, you'd have to ask why the material hadn't been considered before" Stephen said.

Longevity and low maintenance is important for modern civil buildings, which made PERMALITE® anti-corrosive properties ideal on the project, protecting against dust, grit and sitting water. Additionally, where the building design called for overlapping materials, the aluminium provides safeguards against potential future issues at these points.

Approach

As well as providing high quality marine grade aluminium PERMALITE® purlins, Lysaght added efficiency and reduced cost for its partners by pre-punching drill holes as specified by the client.

"Lysaght punched the holes on the production line where required, which meant that the only fabrication that was needed were cut-outs," Stephen said.

Lysaght also offered timely processing and delivery of the PERMALITE® thanks to its extensive supply chain experience. This capability as well as just-in-time delivery is vital for major projects involving many trades and stakeholders.

"We quoted on the project in late 2020; in December we reserved 60 tonnes of coil and once we won the tender we began slitting in March and April 2021, with first deliveries in July and continuing until October," Stephen said.

Architect: GHD Designs

Builder: ADCO Constructions

Photographer: All Is Light Photo & Video



PERMALITE® aluminium purlin screening proved a cost effective alternative



0341p LYSAGHT purlins and girts in structural steelwork; 0423p LYSAGHT roofing - profiled sheet metal
0436p LYSAGHT cladding - profiled sheet metal

www.lysaght.com

Baxter Park Reserve Soccer Pitch, Warragul, VIC



Baxter Park Reserve in Warragul, Victoria, was in need of a major upgrade for its soccer pitch and surrounding facilities. The project was initiated by the Baw Baw Shire Council, and its Capital Works Program for 2020/21 allocated \$2,144,427 to finance the project. The main objectives of the project were to install a FIFA certified synthetic playing surface, as well as adequate and accessible amenities for all match attendees.

Requirements

The project aimed to provide a FIFA-certified playing surface, a drainage system, fencing, playing equipment and storage, an accessible access ramp and stairs, and compliant accessible car parking spaces. Baw Baw Shire Council wanted to create a modern facility for the community to enjoy and provide a safe and compliant access way spanning 235 metres to the soccer fields. Council sought a partner to deliver a first-class, safe, and compliant access way to the soccer field. Requiring a highly skilled project team, installation of the Moddex handrails and balustrades, equipment and equipment storage area, access ramp and stairs, two accessible car parks, and planting out of the embankment area were completed.

Approach

Moddex was approached by Baw Baw Shire Council and specified in the project, with support from the architect

Sporteng and A1 Civil. Moddex was entrusted with the job of providing a safe and compliant access way to the soccer fields. The team at Moddex has a reputation for ensuring everything fits, on budget, and on time. The company's strength of relationship with Baw Baw Shire Council was also a key factor in securing the project. Moddex provided a quick and efficient installation of the black powder-coated finish of CB35 (ramp) with a custom kerbrail configuration for added safety, and CB30 (stairs) products.

The job proceeded as planned, with the powder-coated finishes providing a superior result. Moddex handrails are uniquely engineered to combine and meet safety, compliance, environmental, maintenance, and aesthetic considerations. Their expert designers and technical advisors ensured that the preferred aesthetic was delivered while ensuring environmental factors were catered for.

Results

The Moddex handrails and balustrades were installed within a week, providing a DDA (Disability Discrimination Act) compliant access way for the public. The installation was completed on time and on budget, with the powder-coated finishes ensuring a quality finish. As a result, the Moddex team delivered a first-class, safe, and compliant access way that was durable, easy to maintain, and aesthetically pleasing.

The project was completed with great success, and the upgraded synthetic pitch was officially opened in mid-July of 2021. With all works successfully completed, the upgraded synthetic pitch is now in use, providing the community with a high-quality playing surface for soccer games.



Classic black powder coated finish

Benefits

The Baw Baw Shire Council's decision to select Moddex to contribute to the upgrade of the soccer field and surrounds at Baxter Park in Warragul with a state-of-the-art facility has brought about numerous benefits for the community:

- The Moddex team delivered a first-class, safe, and compliant access way spanning 235 meters to the soccer fields.
- Moddex's powder-coated finishes offered a superior result, ensuring a long-lasting and high-quality finish.
- The Moddex handrails were uniquely engineered to meet safety, compliance, environmental, maintenance, and aesthetic considerations, providing an optimal solution for the client's needs.
- Moddex's exceptional customer service and infallible products ensured that the project was completed efficiently, on time and on budget, with everything fitting together as planned.

Architect: Sporteng

Builder: Sporteng

Photographer: Nick Addison



Baxter Park Reserve



0554p MODDEX steel handrails, guardrails, balustrades and other barriers

www.moddex.com



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PALRAM has grown into an industry leader and multinational conglomerate with branches on six continents. With added focus on advanced technologies, PALRAM offers professionals and users the solutions and support they need for a wide variety of applications. www.palram.com



Established in 1950, Raven Products is an Australian family owned and operated company producing a range of acoustic, fire, smoke, weather and energy sealing systems. Our leading brands comprise RAVEN Door & Window Sealing Systems, CS Cavity Sliders, DTAC tactiles and stair edging solutions.

Raven's door and window sealing systems have become synonymous with quality, value and reliability backed by service excellence, which is why it is the brand that architects, specifiers and builders can rely on. www.raven.com.au



REGUPOL Australia Pty. Ltd. is the Australasian office and distribution network for the REGUPOL sonus acoustic underlays and REGUPOL everroll sustainable flooring product brands. The company has been operating in the region for over 30 years, offering solution-based products and technical services for all kinds of sustainable flooring and soundproofing solution-based projects. The company is conveniently located at Smeaton Grange, NSW and offers the nationwide distribution of REGUPOL sonus and REGUPOL everroll product lines. www.regupol.com.au



Known for excellence and quality for over 75 years, Resene meets the high standards of architectural and building industry professionals. Resene manufactures paint and specialist coatings for residential, commercial, and industrial use. Resene's sophisticated tinting technology enables durable colour options, available in a wide variety of products, to remain true to colour long after application. www.resene.com.au



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Rondo is dedicated to providing the systems needed to realise visions effectively and in the most economical way possible, including systems where specific wind pressure, seismic design, or acoustic design is to be accommodated.

Rondo's commitment to providing market leading solutions, customer service, and high quality products has led it to being behind the best buildings throughout the world. www.rondo.com.au

SAFETYLINE JALOUSIE

Safetyline Jalousie, a leading louvre window brand with over 50 years of history in Europe, arrived in the Australian market in 2009. It is a high-quality option for specifiers looking for a louvre window system with wide louvre spans (up to 1.4 m), impenetrable building security and weatherproof seals. Safetyline Jalousie is distributed by SMR Designs, who have been involved in the Australian home improvement and commercial building market for more than 30 years. www.safetylinejalousie.com.au



Brookvale Oval, Northern Grandstand, NSW



In March 2022 the Manly Warringah Sea Eagles, in collaboration with the NSW government opened Brookvale Oval's new Northern Grandstand.

Requirement

The Architect's vision was a clean, high quality, architecturally pleasing roof, that would not only enhance the new centre's appearance, but would also blend seamlessly into the local surrounds. It also was very important that the roofing material used would not have any detrimental effects on the all-important playing surface.

polycarbonate roof sheet which was not suited for a project of this application and size.

Project application called for a Polycarbonate system that provides high levels of light transmission, with a stylish, elegant architecturally pleasing appearance. Palram's 4mm thick solid polycarbonate Sunglaze product was presented and identified by the Palram project team as being a solution to project requirements. Palram were informed Sunglaze was the best product for this project when compared to 'others'.

required on a 20-metre-long roof sheet length. Engineering was also provided for this section of roof ensuring all was compliant to Australian Standards. Ongoing site visits, guidance and support from the Palram projects team ensured a timely install that would meet all the required warranty conditions.



Engineered Step Joint supporting 10.5-meter sheets

Results

Sunglaze's glass like appearance, 90% light transmission, high strength and the easy to install proprietary Aluminium joining system proved to be the correct choice for the newly named Bob Fulton Centre of excellence. The Centre will provide a focal point for the Rugby league community on the Northern Beaches for this generation and the next, and Palram is proud to have played a part in providing the best solution for such a valuable addition to the local area.

Builder: ADCO Constructions

Contractor: Harbour City Roofing

Photographs: Supplied by Palram

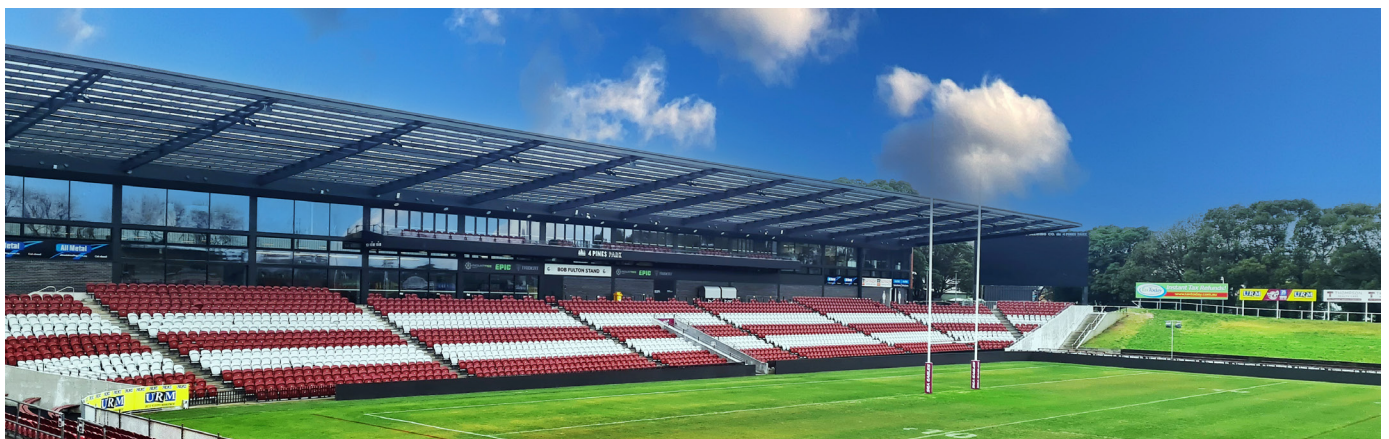


Glass like appearance of Palram's 4mm Sunglaze

The Solution

The Palram projects team identified the requirement for polycarbonate for the main roof and met with the ADCO team to further discuss. The initial specification called for a residential style

Palram's production facility were able to produce cut to size Sunglaze sheets to suit project. Palram also provided valuable information, including detailed drawings, for the step joint that was



Northern Grandstands 2200sqm roof expanse



0429p PALRAM roofing - glazed
0434p PALRAM translucent facade cladding

www.palram.com

Penguin Parade Visitor Centre, Phillip Island, VIC



Raven is proud to have been part of the Penguin Parade Visitor Centre refurbishment on Phillip Island, Victoria. This internationally recognised building sits at the nexus of Victoria's most popular tourism destination. The area is known for its daily penguin parade, which attracts visitors from Australia and around the world.



Penguin Parade Visitor Centre, interior

Challenges

The main challenge faced during the project was the need to improve energy

use within the building and to reduce noise transmission through unsealed gaps around doorways.

The doors used in the old Visitor Centre were not efficient in terms of energy and noise retention. The doors offered little to no acoustic performance when closed and they allowed cold draughts to leak around the unsealed door leaves. These weather intrusions and energy leakages affected occupant and visitor comfort levels in the building. Furthermore, noise levels emanating from the centre were of particular concern as the resident penguin population were sensitive to the noise.

Solution

To solve these challenges, the Centre's design and management team selected and installed the Raven RP8Si and RP120 door sealing system. This proven sealing system provided the Visitor Centre with an effective retrofit solution that at once improved the acoustic, weather and energy saving performance at each doorway.

The RP8si being an automatic door bottom seal when combined with the RP120 perimeter seal, supplies a proven low-cost solution while offering improved fire protection and smoke door control.

Results

The Raven sealing system selected improved the energy efficiency of the building while improving the comfort levels for visitors and the penguins!

Ending heat and cooling loss around doorways is of primary importance in commercial and residential buildings. With proposed changes to the NCC, Raven Sealing Systems offer Architects, Designers and Builders, cost effective solutions that contribute to the design and construction goals of the 7 Star energy rating for buildings in Australia.

Client: Phillip Island Nature Parks

Builder: Kane

Consultants: Terroir

Photography: Peter Bennetts



Penguin Parade Visitor Centre, exterior



The School of Electrical Engineering and Telecommunications, Sydney, NSW



The School of Electrical Engineering and Telecommunications (SEET) at UNSW Sydney is a leading institution for teaching and research in electrical engineering, telecommunications, quantum engineering and space and aerospace engineering. The SEET building is located at 330 Anzac Parade, Kensington, NSW.

needs, such as lecture theatres, laboratories, offices, common areas and corridors. The SEET also wanted to use flooring materials made from recycled or renewable resources as part of its sustainability and social responsibility commitment.

As REGUPOL everroll flooring reduces both waste and greenhouse gas emissions and has excellent acoustic qualities for reducing impact sound transmission between floors and rooms, the decision ensured a safe and secure user environment with its superior slip resistance and fire safety rating.

The noticeable elasticity and comfort of this flooring contributes to reducing fatigue and enhancing performance, which is invaluable for our users' experience. Furthermore, the range of colors, thicknesses, and finishes available allowed customisation to match our preferences and meet our specific requirements.



In 2022, the SEET building underwent a major renovation to upgrade its facilities and create a modern and sustainable learning environment for students and staff. One of the key aspects of the renovation was the selection of flooring materials that would meet the high standards of performance, durability, safety, and aesthetics required by the SEET.

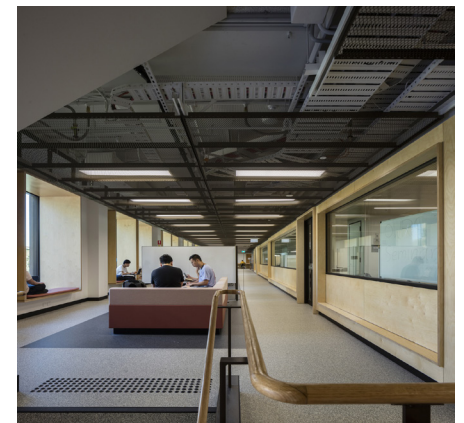
Requirement

The SEET building consists of various spaces with different functions and

Approach

After considering various options, the SEET chose REGUPOL everroll flooring for most of its spaces.

One of the standout features that grabbed our attention is its composition, which utilises recycled rubber granules fused with polyurethane. The SEET wanted a flooring that is durable, resilient whilst maintaining its shape and appearance even under high-impact and heavy-duty use.



Results

REGUPOL everroll flooring contributed to the SEET's sustainability goals, as it reduced the environmental impact of the renovation project and provided a long-term solution that minimised maintenance and replacement costs.

The SEET was satisfied with the outcome of the project and the performance of the REGUPOL everroll flooring. The project demonstrated how REGUPOL everroll flooring can meet educational institutions' diverse and demanding needs and provide a superior flooring solution for various applications.

Architect: Hassell Studio

Client: School of Electrical Engineering and Telecommunications (SEET) at UNSW Sydney

Builder: AW Edwards

Acoustic Engineer: Acoustic Studio

Photographer: Brett Boardman Photography



0473p REGUPOL acoustic floor underlays
0651p REGUPOL in resilient finishes

www.regupol.com.au

The Museum of Play and Art, Geelong, VIC



A creative couple pioneers an innovative museum where kids and colour rule.

Billie Georgieff and Tom Mahon were welcoming their second son that they realised something was missing: a place where their children could be boundlessly immersed in art and creativity.



The Museum of Play and Art (MoPA) in Geelong, Victoria is the first children's museum of its kind. Billie Georgieff and Tom Mahon searched the world for a similar concept before realising it was up to them to make it happen. The museum and its colourful exhibits are painted with Resene Adrenalin, Resene Torea Bay, Resene Scrumptious, Resene Roadster, Resene Biloba Flower, Resene Broom, Resene Sandy Beach, Resene Bella-donna, Resene Ballerina, Resene Guggenheim, Resene Curious Blue, Resene Paper Doll, Resene Decadence, Resene White and Resene Black

Requirement

"We wanted to build a museum that helped foster the specific skills in our children that are now broadly acknowledged to be abilities that aren't going to be automated and replaced by machines. For the most part, these skills are about community, human connectivity, problem solving and philosophy and, most importantly, creativity! And we were overflowing with ideas for how we'd do it."

Billie says the MoPA logo was designed from bold, graphic shapes cut from paper and that fed into the overall look and inspiration for the design of the physical space.

"It was important to us that the space felt sophisticated and interesting as well as bright and colourful. We needed

flexibility within the colour palette as the applications went from pipes on walls to an entire hand-built city that measures 10 metres long! The suite of colours we chose reflected that brief and was divided quite simply into brights, pastels, primary and secondary colours. From here we added a highlight colour where needed and mixed the palette in interesting ways.

"Rather than print colours on vinyl – like many would have in our circumstances – we really wanted to paint everything." Billie continues. "It just gives it a different feel. Firstly, we wanted our colours to be the richest, deepest paint colours we could find. Our local paint shop suggested we look into Resene, and our world really changed from that moment on."



Approach

Throughout the museum, murals, walls and displays light up the space in an array of bold and engaging Resene paint colours. The walls were first prepped with Resene Quick Day waterborne primer undercoat before the colour coats were painted in Resene Lumbersider then sealed with Resene Aquaclear satin.

"It wasn't just the colour that led us to exclusively use – and continue to use – Resene," says Billie. "One thing we've learned about children's museums is that they need to be bulletproof. If a hammer can break it, a three-year-old can too!"

"The paintwork at MoPA Geelong is, remarkably, as bright, sharp and clean as the day it was painted. We keep a fastidious cleaning regime, and so everything is wiped several times a day, yet nothing has faded or marked

permanently. We actually think it's incredible, really, how well the paint has held up in these conditions. And so it was an absolute no brainer that we'd use only Resene for the new museum in Melbourne, too.

Result

"It's the quality of Resene's products and the service that we appreciate. Lots of children's facilities we have seen use plastics to achieve a long-lasting exhibit – but the colour is often pretty average, and so we took a punt and decided to paint everything rather than seek artificial finishes. We've had professional painters comment on how smooth, bright and vibrant the finish is. And there's no doubt in our minds that this is the result of incredible products, applied with passion and care.

"We continuously seek advice from the Resene team and there isn't a single time they've not had valuable expertise to share. From colour consultation to treating timber to undercoating, topcoating and clear coating – which helps give the museum its vibrancy and tenure – the staff's knowledge really is pretty incredible."



MoPA's colourful cityscape is a favourite creation in the Geelong museum and features Resene Roadster, Resene Adrenalin, Resene Paper Doll, Resene Broom, Resene Sandy Beach and Resene Black

Design: Billie Georgieff and Tom Mahon
Photography: MOPA

Queen's Wharf, Brisbane, QLD

RONDO®

Brisbane's Mega precinct Queen's Wharf has significantly raised the bar on complex design and construction. The already iconic, and ambitious project has brought together some of the most innovative, and impressive architectural and construction solutions to date.



Curved soffits at Queen's Wharf, Brisbane QLD

With its incredible signature 'arc', architects Cottee Parker designed the stunning \$3.6b integrated resort development, transforming the underutilised riverside space into a breathtaking mixed-use oasis of residential apartment towers, premium hotels, a casino, and retail spaces.

Requirement

Rondo were engaged in the early design process to provide proactive support for the design and installation of lightweight steel systems of the internal walls and ceilings. Providing support to architects Cottee Parker, Builder Multiplex, and contractor Superior Walls & Ceilings, Rondo were tasked with designing lightweight steel systems around a complicated structure, and

providing innovative product, and compliant design solutions to create the architectural designs of the soffits, and the elevated walkways at the podium level.

Challenges

The podium level soffits featured a breathtaking curved design, which echoed in the striking curved details of the elevated walkways. Reflecting Cottee Parkers design vision, while ensuring compliance with seismic and wind loads produced some quite complex, and significant challenges for both the design and construction teams. Site access restrictions and time restraints created an additional layer of complexity to the construction process.

Approach

Rondo Design Engineers successfully overcame these complexities by designing the spectacular curved soffit frames, which included a specifically designed braced rail system that achieved high wind pressure and seismic compliance. Custom Radiused Rondo Top Hats attached to the braced rail system created the stunning architectural design of the curves, that collectively, formed the uninterrupted wave design.

Rondo Design Engineers also developed steel frames, that were prefabricated in Rondo's facility in Yatala, QLD. These custom, prefabricated frames were used to construct the curved 'wings' for the elevated walkways.

Results

Designed and manufactured in individual, strong, and lightweight steel panels, they interconnected seamlessly along the length of the walkways. The specifically designed and manufactured movement joint panels, allowed for expansion and contraction of the wing panels where the bridges joined to the main podium structures, working to resist the high wind loads and achieve the architectural design.



Custom designed and Prefabricated lightweight steel panels

Benefits

The benefits of Rondo custom engineered designs and prefabricated frames were a game changer for elevating efficiencies on the Queen's Wharf project. With no cutting, or extensive assembly on site required, wastage was significantly decreased.

These prefabricated frames were lightweight, making them easy to install, even at heights, which enabled Superior Walls and Ceilings to significantly reduce installation times and achieve construction timelines, even with significant site access restriction. Prefabricated lightweight steel frames were a far more advantageous and efficient alternative to initial product considerations for the project, such as GRC- glass reinforced concrete.

Engaging Rondo early design services ensured that proactive product and design solutions for the Queen's Wharf soffits and elevated walkways increased project efficiencies and met compliance requirements.

Architect: Cottee Parker

Builder: Multiplex

Contractor: Superior walls and Ceilings

Photography: supplied by Rondo



Elevated Walkway and curved soffits at Queen's Wharf

Estella Public School, Estella, NSW

SAFETYLINE JALOUSIE

Estella Public School is a brand new public school for the School Infrastructure New South Wales (SINSW) major school building program using volumetric Design for Manufacture and Assembly (DFMA).

Nearly 200 Safetyline Jalousie louvre windows were included in the DfMA kit of parts for Estella Public School, manufactured in accordance with a standardised design set out by School Infrastructure NSW.

Results

The prefab methodology employed at Safetyline Jalousie ensures the highest standards in a controlled factory environment, with precise, predetermined dimensions to guarantee



Framed on 3 sides, Safetyline Jalousie louvres are able to accommodate laminate safety glass in compliance with the Education Facilities Standards & Guidelines (EFSG)

Requirement

DfMA is a design and construction process that combines the manufacturing of building components such as wall systems and facades, in a safe, clean and efficient environment with onsite construction assembly. DfMA allows more quality schools to be built in less time, providing greater delivery certainty, with less impact on the environment, local communities and existing school operations.



The robust and durable design of Safetyline Jalousie louvre windows was a key consideration in the design team's whole-of-lifecycle approach

Approach

Supplied as complete framed and glazed units, the prefabricated windows incorporated 6.38mm Laminated safety glass, inbuilt security via the horizontal louvre bearers, and predrilled fixing holes in the frames to provide quick and easy installation into the double storey building modules.

quality every time. Other benefits realised by SINSW through this process have included less trades on site, and as such, less noise, dust, traffic and disruption, and through the onsite time savings, a significant reduction in construction costs.

Architect: Perumal Pedavoli Architects
Photographer: Ben Guthrie



Safetyline Jalousie louvres help to optimise the safety and security of the learning environment



"The Australian Institute of Building Surveyors (AIBS) congratulates NATSPEC on their work to update and publish their National Building Specification.

"Building surveyors gain significant confidence when a project has utilised a National Building Specification published by NATSPEC. In the current environment of product uncertainty and complexity of design, it is reassuring to see a clear and thorough approach to specification of buildings. The benefits of this are a smoother assessment process and greater certainty through inspections. The end result is that building surveyors operating in statutory roles throughout Australia are better able to deliver on their responsibilities to the public and their clients.

"AIBS continues to fully support the National Building Specification from NATSPEC."

Troy Olds, AIBS President & Director



SOPREMA is an international manufacturer specialising in the production of innovative products for waterproofing, insulation, soundproofing, and vegetated solutions in response to the specific challenges within the construction industry for the roofing, building envelope, underground and civil engineering sectors.

With over 100 years of expertise, SOPREMA has earned its place as a world leader of the waterproofing industry, and the availability of its technical team. www.soprema.com.au



We're one of Australia's leading manufacturers and suppliers of roll-formed steel building products – and for good reason. For everything steel roofing, rainwater or structural, you can count on Stramit. We work with clients from specification stages to installation. With our national network, the backing of Fletcher Building, our national network, state-of-the-art R&D facility and rigorous product testing, you can kick off your next project with confidence. When you work with Stramit, you can consider the job done. www.stramit.com.au



Taubmans is a proud PPG Architectural coatings brand in Australia. Your local Taubmans team supports the industry with high quality performance paint and colour support for residential and commercial projects.

PPG works every day to develop and deliver the coatings that customers have trusted for more than 135 years. PPG makes coatings which support high specification requirements in the architectural space as well as high performance industries like automotive, aerospace, industrial, packaging and more. www.taubmans.com.au



For 30 years, the TERMIMESH SYSTEM has come with unreserved guarantees for product efficacy in construction projects. TERMIMESH protects buildings as well as the reputations of architects and builders. TERMIMESH were the first to issue a warranty of substance covering workmanship, materials and consequential termite damage and continue doing so.

Only the TERMIMESH Pledge Guarantee delivers the first 10 years of protection without compulsory annual termite inspections and with the opportunity for indefinite ongoing extensions. www.termimesh.com.au



One Sydney Harbour, Sydney, NSW



Although the visible elements of a building may garner more attention, it is the unseen components that can have a more significant impact on its performance, durability, and lifespan.

Building foundations ensure building loads are supported and distributed, and neglecting to implement a robust waterproofing system to such critical components can lead to disastrous consequences for the building's structural integrity and safety.

In high-density urban areas, such as Sydney, Melbourne, Brisbane or Perth, property lines and other site conditions often do not permit the excavation of an open trench outside the perimeter of the foundation, limiting the foundations waterproofing options; to add to the challenge, these projects often feature deep foundations. Under these conditions, a high-performance pre-applied foundation waterproofing system like COLPHENE BSW must be used.

Requirement

Lendlease's One Sydney Harbour is a luxurious residential development situated in Barangaroo, Sydney, consisting of three luxurious waterfront residential towers, reaching 247m (72 floors), 230m (68 floors) and 104m (29 floors) in height. Like all structures, its foundations have a crucial role to play, and it is therefore critical to protect them from water infiltration to avoid cracking and other damage that would

have subsequent repercussions on the building.

Approach

ACOR consultants were contracted by Lendlease to undertake a detailed examination of the plans and specifications for the buildings foundations and identify waterproofing requirements for its protection.

After careful consideration, ACOR opted for SOPREMA's COLPHENE BSW, a below ground waterproofing system with superior adhesion. BSW stands for "Blind Side Waterproofing", since the waterproofing is done on the exterior before the concrete is poured. The system involves installing high-performance waterproofing membranes that fully bond to the structural concrete. They are installed against a soil retention layer system adjacent to the surrounding building, before the concrete is poured for the new foundation.

Benefits

The system benefits from the effects of the exothermic reaction that occurs during the concrete's curing process, as the concrete cures, the surface of COLPHENE BSW membranes softens slightly. This contributes to the adhesion of the membrane to the concrete, preventing the ingress or migration of water around the structure and ensuring complete adhesion, eliminating the risk of water moving laterally between the waterproofing membrane and

foundation structure. These unique properties are complemented by SOPREMA's unique and patented DUO SELVEDGE technology, allowing the side laps of the membrane to be heat-welded using a torch or a heat gun, providing additional waterproofing safety at overlaps.

Waterproofing needs to be considered at the front end of any building construction project—in the design phase of a project. Designers and architects should consult with waterproofing manufacturers and contractors during the design phase to ensure that all requirements are fulfilled. Communication across all stakeholders is key, many problems can be traced back to parties failing to talk with one another or pre-construction meetings not being scheduled properly, so it is crucial to take special care to avoid potential oversights early on.

Waterproofing comes with many considerations, each of which needs to be examined carefully to protect critical components and maintain the health of a building. The complexities can be overwhelming, but that's where having the right expertise and materials can seal the deal.

Architect: Renzo Piano Building Workshop - Italy

Builder: Lendlease

Consultants: ACOR



This artist impression illustrates the key location of the towers. In such a high-density urban areas, with limited site conditions and excavation options, a high performance waterproofing foundation system with superior adhesion is a must. Image taken from One Sydney Harbour site

Scotch College Boathouse, Perth, WA



Our passion for innovation is what drives us, and we're thrilled to unveil our latest project that embodies our commitment to pushing beyond conventional limits.



Stramit ZAM Z purlins create a lasting, solid structure

Requirements

The Scotch College Boathouse, located on the picturesque Swan River riverfront, boasts a breathtaking architectural design. However, the salty air and water pose a significant threat to the building's structural integrity, leading to potential corrosion issues. To ensure the longevity of this beautiful structure, we utilised the latest in high-corrosion-resistant technology – ZAM® coated cold-rolled steel sections.

Approach

With our collaboration between Advantesting Engineering and Perth Metalworks, we have successfully conquered the distinct obstacles of working over water, showcasing our expertise in the precise installation of ZAM® coated C and Z sections. Our unwavering commitment to excellence guarantees that the resulting structure not only exhibits stunning aesthetics but also boasts exceptional durability, even in the face of challenging environmental conditions. By utilising the superior qualities of ZAM® coating, we have



Extension from the existing roof line

created a building that will endure and thrive, providing our clients with a long lasting and resilient solution that surpasses all expectations.

Results

Bruno Pomponio, State Manager said, "ZAM lasts over three times longer than all conventional cold rolled coated or hot dip galvanised products in any given Corrosivity Zone. Scotch College is a leading private school with a long history. They highly value a product that will extend their asset's longevity which is why ZAM coated purlin is an excellent choice for durability and performance."

The STRAMIT team take immense pride in providing Z and C purlins to The Scotch College Boathouse, featuring state-of-the-art product coatings and software that enabled the creation of a resilient structure using easily accessible sections. By actively participating in projects like this, we demonstrate our unwavering dedication to innovative solutions that harmoniously blend aesthetics and functionality. The Scotch College Boathouse completion is not only visually appealing but also built to withstand the test of time.

Architect: Scribe Design Group

Contractor: Advantesting

Structural Engineer: Pritchard Francis



0311p STRAMIT Condeck in concrete formwork 0341p STRAMIT purlins and girts in structural steelwork
0423p STRAMIT roofing – profiled sheet metal 0431p STRAMIT in cladding - combined

www.stramit.com.au

The Osborne Park Hospital Rehabilitation + Neonatal Nursery (OPHRNN) project aimed to improve and extend the rehabilitation, maternity and neonatal services and facilities at the Osborne Park Hospital. This included a new 16-bed ward, alterations and extensions to the inpatient and outpatient therapy hub, a new therapy garden, a new maternity assessment unit, a new neonatal nursery, and alterations to the maternity ward.

In this project all existing and new hospital buildings were painted, refreshing the hospital spaces. Taubmans Pure Performance Ceiling, Prep Coat, and Interior Walls Low Sheen paint was specified in this project along with Johnstone's woodcare and other PPG products.

This project was successfully completed in collaboration with the Carabiner architect team, the Hao Contracting painting team and Taubmans' WA commercial team.

Requirement

Any finishes in a health care setting must be carefully considered to reduce or eliminate the effects of harmful chemicals and odours as well as inhibit the growth of bacteria to support safe and hygienic spaces for patients and staff. Paints are no exception, and painting systems with anti-microbial properties and low VOC,

like Pure Performance, addresses these challenges for hospital and health care spaces.

Approach

Working together with Carabiner, Taubmans' commercial team recommended coating solutions which were fit for purpose at OPHRNN. Whether the space was an area exposed to the external environment, wet areas, or clinical or non-clinical spaces. The team advised the interior painting systems to include Pure Performance products with its anti-microbial properties and very low VOC to solve the health care concerns and demand.



The Therapy Hub

Benefits

The positive impact made by this paint project has been widely felt by staff and patients. The Therapy Hub has undergone the biggest transformation, with one Physiotherapist stating 'it is probably one of the best rehabilitation spaces she has worked in'.

Benefits included:

- Microban antimicrobial product protection
- Sensitive Choice approved and asthma friendly
- Very Low VOC and low odour
- Available in a wide range of colours

Results

The interior colour schemes for the OPHRNN project were based on the application of colour theory and therapy. Colour is a fundamental element of a human-made environment and very important in health care settings as it can affect the mind and moods. The psychology of colours and tones was the primary reason colours were chosen rather than the aesthetics and trends at the time.

In the Neonatal Nursery, green works to promote harmony, rest, and balance in people's physical and mental comfort. Green helps to reduce any worry, stress, or anxiety for parents, carers, and staff working in the nursery.

Orange is an energising colour that can help to provide a gentle warming effect and is known for stimulating depressed patients and elevating moods. Orange was used in the Maternity Assessment Unit which is used by expectant mothers who might suffer from depression and mood swings due to their pregnancy.

As a calming colour that promotes trust, blue was applied to Rehabilitation Ward to help patients release tensions and stay mentally calm. Blue is in the cold colour range and can also promote pain relief and mental relaxation by helping to reduce body temperature and relieve tension.

Yellow was applied to the Therapy Hub; a space for inpatients and outpatients undertaking rehabilitation. Using yellow sparsely can promote positive stimulation of the mind and body and help increase the mechanisms of the human body.

Photography: Supplied by Taubmans



The Neonatal Nursery

Perth Zoo, South Perth, WA



Perth Zoo, located in the suburb of South Perth is recognised as a world-leading conservation zoo. To reinforce this status for decades to come, the Government of Western Australia has outlined their Zoo Master Plan 2040, which includes the construction of new precincts, expansions and amenities. The redevelopment of the long serving Function Centre and Visitor Café is one of the major projects set for completion in the second half of 2023.

Termimesh was selected as the termite management system for both these amenities to meet the Department of Finance's tender requirements.

Requirement

Christou Design Group specified a TMA stainless steel termite barrier mesh for installation to ensure compliance with the Australian Standard for Termite Protection (AS 3660.1). When selected for Government projects, the Termimesh System is typically specified for perimeter installation, service penetrations and control joints. However, this project was specified with full under slab termite mesh protection to align with the Zoo Master Plan objectives.

Approach

Protecting the Function Centre from termite infestation and ensuring structural longevity, a full mesh barrier system was installed. A total of 332m of mesh was installed along the entire perimeter of the slab, including

perimeter cold joints and cold joints to rammed earth walls. One hundred and forty-four Termiflange termite mesh collars were installed and embedded around both singular and clustered vertical slab penetrations.



Termiflange termite mesh collars installed around clustered vertical slab penetrations

In addition, this full under slab installation specification saw the Termimesh stainless steel barrier installed between the damp proof membrane and reinforced concrete ground slab. In total, Termimesh certified technicians installed over 1,500 m² of Termimesh for this portion of the project with each sheet requiring overlap and folding to ensure integrity of the barrier.

Delivering complete protection for this project was a well-executed logistical exercise. The size of the project required multiple concrete slab pours over several days. Over one hundred slab penetrations and eighty-six structural columns required precise measuring, cutting and securing of the mesh flanges before the concrete slabs could be poured.

Protecting the raised Visitor Café, two hundred and fifty-eight Termimesh termite mesh caps were installed around the top of all columns supporting the suspended floor. The installation of these termite mesh caps helps ensure termites will not gain access to the installed decking system. Sixty-five termite mesh collars were also installed on all service pipes entering under the building.



Termimesh termite mesh caps installed around the top of columns supporting the new Visitor Café

Results

Specification of the Termimesh System will prevent termite entry to these new amenities for the practical life of the buildings. Manufactured with proprietary TMA stainless steel, Termimesh guarantees the wellbeing of Perth Zoo guests and animals. Specifying a physical termite mesh barrier negates the need to use poisonous chemicals both in the initial construction stage and for the future.

A detailed report outlining the installation of the Termimesh System was provided to the client, along with Pledge Guarantee documentation. The Pledge Guarantee is unique in that it delivers ten-years up-front protection. The warranty can be continuously extended with an approved annual termite inspection during the initial ten-year term and onward.

Architect: Christou Design Group
Builder: Crothers Construction
Photography: Supplied by Termimesh



Termimesh sheets installed above the damp proof membrane of the new Function Centre





"Standards Australia endeavours to shape a safer and efficient Australia, cementing our role within the building and construction sector. Sharing the same values as NATSPEC, Standards Australia are proud to be key partners. The ongoing quality and productivity focus with the beneficiaries of a safer community being Australians."

Adrian O'Connell, Chief Executive Officer, Standards Australia



TermShield are Australian termite specialists with extensive experience in installing physical termite management systems for residential, commercial and industrial buildings. As an Australian owned and operated company, we pride ourselves on providing a friendly, personalised and professional service for all our clients. Our expert team is trained and skilled in stainless steel physical termite management systems. TermShield is CodeMark certified and is backed by TermShield's industry first 60 Year \$1,000,000 Diamond Warranty. <https://termshield.com.au/>



GETZNER was the first company in the world to effectively solve vibration engineering challenges using polyurethane materials. Headquartered in Austria, GETZNER, has been developing polyurethane-based solutions for the isolation of undesirable vibrations and noise for over 50 years. Its Sylomer, Sylodyn, Sylodamp and Isotop products were developed and manufactured at GETZNER'S own facility. They are used in the construction and industry sectors to reduce vibrations and noise to create a higher standard of living. www.vibrationsolutions.com.au



Wattyl - Solutions for every project.

Wattyl has been at the forefront of surface coating technology since 1915. With a comprehensive range of market-leading ultra-premium paints, lacquers, varnishes and specialised coatings, Wattyl's iconic brands include Wattyl Solagard, Interior Design, Estapol and Killrust. Wattyl is owned by Valspar, a global leader in quality paint and coatings solution. With detailed architect and specifier support services, Wattyl covers everything inside and outside, from residential to large-scale commercial projects. www.wattyl.com.au



'... the level of quality that can be policed in the construction stage cannot be higher than that which is spelt out in the contract. If the building contract documents permit a sow's ear then all the quality control in the world cannot demand a silk purse... True quality control starts with the documentation for a project and in the project specification in particular...'

'... for many years an army of experts has been producing minimum quality standard specifications for reference in a variety of industries, including the building industry, and in regulations relevant to those industries.'

'Nothing could be more necessary, more logical, more timely or more useful in today's building industry or more responsive to the call for quality control than a specification system tied to relevant Australian standards. That is what NATSPEC sets out to be.'

Bryce Mortlock - Father of NATSPEC, RAIA Gold Medallist



Porter Creek Primary School, Warnervale, NSW



Porter Creek Primary School, located in Warnervale NSW, is a new school project under NSW Department of Education – School Infrastructure. Constructed by the award-winning team Richard Crookes Construction and consisting of multi-storey teaching buildings, a library, hall and administration buildings, this project is another great example of building pesticide-free from the ground up.



Porter Creek Primary School internal with timber

The NSW Government shows that being pesticide-free does not have to be complicated or costly.

TermShield has experience all over Australia and the world in both Government and private projects. The team support provided allows architects, builders and their clients to easily specify and install our system through one of our specialised and licensed authorised operators.

Requirement

As with all NSW Government Education Projects, Porter Creek Primary School required a poison-free, pesticide-free termite solution that would last the life of the building. Termite protection was required to all service penetrations, construction joints, columns, and building perimeters to prevent concealed entry. The system needed to comply with Australian Standards AS3660.1:2014 and have CodeMark Certification.



The TermShield System ticked all boxes and was proudly installed once again in another premium project.

The construction was predominantly of concrete castings and prefab concrete. The many different installation details were covered by our many installation options, ensuring a smooth process and minimal delays in construction build times.

Solution

TermShield Stainless Steel Termite Management System. Installation of all system components as follows:

- **TS1000 Mesh** Made from High Marine Grade Stainless steel.
- **TermLok Parge** A specially formulated cementitious parge to secure the TS1000 to concrete and other termite-resistant materials.
- **TermBlok Collars** Manufactured from TS1000, designed for all services passing through the slab from the earth.
- **TermGrip Clamps** Specially made 316 stainless steel clamps to secure TS1000 and TermBlok Collars to columns and services.

System components were installed to all service penetrations, columns, construction joints and building perimeters to prevent concealed entry from subterranean termites.

Outcome

The buildings are now covered by the manufacturer's industry-leading 60-year diamond warranty with no need for retreatment with any chemicals. This is ideal as staff and children are on site most of the year. Annual inspections will be conducted for peace of mind and to comply with building regulations and Australian Standards.

Architect: Billard Leece Partnership
Main Contractor: Richard Crookes Construction

Client: School Infrastructure NSW
Photography: Supplied by TermShield



Porter Creek Primary School external



0184p TERMSHIELD termite management

<https://termshield.com.au/>

448 Edgecliff Road, Edgecliff, NSW

Getzner Vibration Solutions were approached by Gledhill Constructions to provide a customised solution to reduce vibrations entering the foundations of a new development situated 8 meters above the metro train line. "Elevated above iconic Sydney Harbour, 448 Edgecliff Road provides a splendid stage for these cultured residences. Where living is an art form that is entirely in keeping with the name of your remarkable new home." (Extract from sales Platform).

Requirement

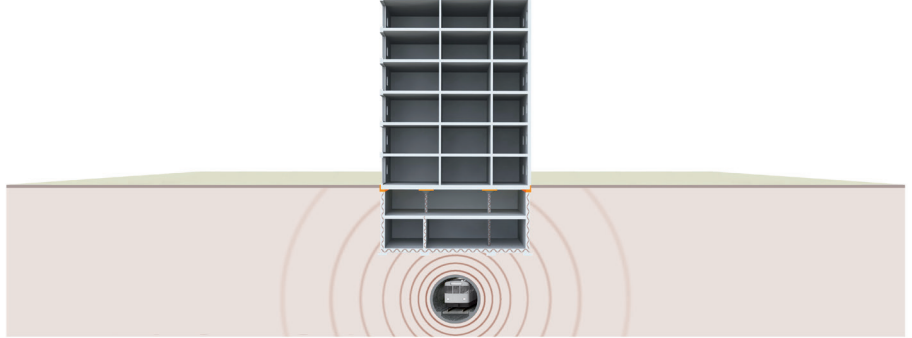
Train vibrations are a very common problem to building foundations as urbanisation creeps closer to infrastructure and land of course, close to transport corridors is very well sought after. If untreated these buildings can lead to various complaints as well as low resale prices. A very well respected acoustic consultant firm identified the need to isolate the foundation from these vibrations to increase human comfort, avoid any unnecessary

Approach

Elastic foundations with low natural frequencies are Getzner's specialty as we have been doing these globally for many years. The building was designed hence our solution had to not only exceed high standards, we also had to be extremely flexible to enable our solution to fit in with the structural engineering plan with minimal design changes. Fortunately our materials are available in different stiffnesses for varying loads so after getting all



Material being carefully installed



Elastic layer to isolate against subsurface vibrations

Foundation vibration isolation is not new to Getzner as we have successfully completed many similar projects globally.

complaints as well as achieve high residual values. Our brief was to design a solution that exceeded these vibration standards without too much disruption to the current building design.

of the design loads, Getzner were able to supply a detailed calculation with a layout plan for the point and strip bearings. This was finalised in a very tight timeline as the material was required onsite inside 10 weeks. Upon winning the project we also hired an external consultant to oversee the installation of our materials as well as maintaining documentation and images that are traceable back to each installed part.

Benefits

Owners of these luxury apartments can go about their daily lives without interruption from a metro tunnel situated directly beneath them. Noise and vibrations are effectively captured in our materials and our materials are extremely long lasting, maintenance free with minimal creep.

Client: Gledhill Construction

Developer: Primo Development

Consultants: Acoustic Logic, Luigi Rosselli, Partridge



Protective layer to control vibrations

Anadara and Alexander Apartments, Barangaroo, NSW



Anadara and Alexander residences, Barangaroo showcases Sydney as a world leader in sustainability – carbon neutral, water positive, zero waste generation and enhancement of community wellbeing.

Barangaroo's goal was to be the first precinct of its size in the world, and the first precinct in Australia to be carbon positive.

Alexander is a boutique building inspired by its maritime setting, created by renowned PTW architect Andrew Andersons. With lush green gardens embracing the facade and rooftop framing Alexanders magnificent harbour views. While Anadara is designed by fjcstudio (formerly fjmtstudio) renowned Richard Francis – Jones and is named after the Anadara trapezia, the Sydney Cockle. Its fluid form responds to the ever-changing Harbour landscape.

Both buildings occupy absolute waterfront on the former 22-hectare container port and is the greenest global residential, shopping and business centre in the world over looking the most revered harbour in the world.



Alexander Apartments, Barangaroo

Requirement

As one of the largest and most anticipated projects in Sydney, the projects high level of sustainability specified materials needed to deliver the highest durability and serviceability.

Approach

Wattyl was selected as the preferred coatings partner for the Anadara and Alexander apartment projects developed by Lendlease and crucial in the selection were Wattyl's Green Star compliant products, which contributed to the building's high environmental standards.

More than just a paint supplier, Wattyl provides continuous technical support, specification services and quality control from project conception to completion. Wattyl is committed to global best practice, environmental performance and safe manufacturing, with the aim to reduce air pollution, material use and energy consumption.

Results

Our products comply to leading industry associations and certification systems.

Architect: fjcstudio (formerly fjmtstudio)

Developer: Lendlease Development

Builder: Lendlease Construction and Infrastructure

Paint Contractor: Tresamber

Photographer: Peter John Miller



Anadara Residences, Barangaroo



0671p WATTYL painting

www.wattyl.com.au



"The Australian Institute of Building is proud to support the work of NATSPEC."

"The Product Partner Case Study Magazine is another useful guide which provides examples of a Product Partner and subscriber's capacity and credibility. It also adequately addresses the necessity of high-quality construction specifications. The magazine increases exposure of manufacturers who have achieved high-quality projects which add value to the built environment. We congratulate NATSPEC for sharing such a valuable resource with the industry. This type of initiative when utilised by designers and constructors to achieve a universal quality of material selection will assist in creating Building Confidence for end consumers."

Scott Reid, National President, AIB



"It's incredibly important to manage processes, it's incredibly important to manage information: to know what information is correct, what information is out of date, and what is the current information. NATSPEC is very important because it is a common language and what it does is, it creates a whole specification database for the elements we're proposing to build. Essentially, working through NATSPEC provides you with a full gamut of opportunities that you can potentially face, so it acts as an aide-mémoire as well as working through the documentation."

David Sutherland, Fender Katsalidis Architects

"An architectural practice should have, amongst other things, three fundamental project control documents: its Integrated Management Manual, the National Construction Code and NATSPEC."

Tony Kemeny, Gran Associates



"...Hence, the courts and others often look to the specification in particular to determine the message conveyed by the contract documents to those who work with them."

Acumen, Australian Institute of Architects



"Using good design documentation, you protect your reputation, you reduce defects, you produce high quality, you reduce costs, and most importantly, you deliver on time. And without good documentation you can't achieve these objectives."

"Clearly defined quality requirements reduce construction cost blowouts that result in re-work, redesign, variations and disputes. Good quality construction increases asset value due to longer asset life."

Mario Macri, Lendlease



PRODUCT SPECIFYING AND SUBSTITUTION

PROPRIETARY SPECIFYING

In NATSPEC *Proprietary* means identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.

GENERIC SPECIFYING

The aim of the specification writer in customising NATSPEC for a project is to describe performance as follows:

- Measurable outcomes in terms of:
 - Conformity to a standard.
 - Product tolerance.
 - Construction tolerance.
 - Delivery and energy use.
 - Durability.
 - Compatibility with existing systems.
- Comparable outcomes in terms of:
 - Colour and texture.
 - A benchmark description.

Evaluation criteria include:

- Type tests.
- Evidence of conformity to a standard by a NATA accredited testing laboratory or JASANZ accredited certification body.

SUBMISSIONS

NATSPEC has provisions for specifying particular requirements for submissions. Provision is also made for specifying time and program constraints for submissions. The subclause relating to information submissions for building products under 0171 *General requirements*, SUBMISSIONS AND INSPECTIONS, **SUBMISSIONS** is:

Project requirements

Products and materials data, including manufacturer's technical specifications and drawings, product data sheets, type tests results, evidence of conformity to documented requirements, product certification, performance and rating tables, service connection requirements and installation and maintenance recommendations.

NATSPEC POLICY ON SUBSTITUTIONS

In order to maintain the contractor's contractual responsibility regarding supply, NATSPEC allows for substitution within 0171 *General requirements*. The following italicised text is an extract from PRODUCTS AND MATERIALS, **SUBSTITUTIONS**:

General

Identified proprietary items: Identification of a proprietary item does not necessarily imply exclusive preference for the identified item, but indicates the necessary properties of the item.

Alternatives: If alternatives to the documented products, methods or systems are proposed, submit sufficient information to permit evaluation of the proposed alternatives, including the following:

- Product, method or system identification.
- Manufacturer's contact details.
- Detailed comparison between the properties of the documented product and proposed substitution.
- Details of manufacturer and/or installer warranty.

- Statement of NCC compliance, if applicable.

- Evidence of conformity to a cited standard.
- Evidence that the performance is at least equal to that specified.
- Samples.
- Essential technical information, in English.
- Reasons for the proposed substitutions.
- Statement of the extent of revisions to the contract documents.
- Statement of the extent of revisions to the construction program.
- Statement of cost implications including costs outside the contract.
- Statement of consequent alterations to other parts of the works.

Availability: If the documented products or systems are unavailable within the time constraints of the construction program, submit evidence.

Criteria: If the substitution is for any reason other than unavailability, submit evidence that the substitution:

- Is of net enhanced value to the principal.
- Is consistent with the contract documents and is as effective as the identified item, detail or method.

Optional text

Costs: Pay the cost of submissions and of evaluations and tests of proposed alternatives, whether subsequently adopted or not. The costs will be calculated at the current charge-out rates of the relevant consultant(s).

ACUMEN ADVICE ON SUBSTITUTIONS AND VARIATIONS

An architect administering the contract should be aware that:

- A substitution may be contrary to the owner's requirements. When the owner signs a contract with the contractor, the materials described in the specification are a requirement under that contract and the substitution of materials without approval may be a breach of the contract and any applicable warranties.
- If the contractor substitutes materials without approval, the owner is entitled to give notice to the contractor that the specified materials must be installed, or in the alternative, the owner may claim damages for the substitution because without approval by the owner the contractor may be in breach of the contract.

(Italicised text is an extract from

Substitutions in

acumen.architecture.com.au, the Australian Institute of Architects' practice advisory subscription service.)

NATSPEC PRODUCT PARTNERS



A NATSPEC Product Partner is a building product manufacturer with an agreement with NATSPEC to include a purpose edited worksection in NATSPEC.

A NATSPEC branded worksection is a technical worksection produced in NATSPEC format in conjunction with a Product Partner. Branded worksections provide specifiers with an alternative to the generic worksection where a particular product has been selected at the design stage.

The research prior to the selection of a product or system is filtered, to eliminate inappropriate choices. The requirements of the client, regulators, standards, and the designer all affect whether the selection is presented as a generic or a proprietary item. The NATSPEC worksections facilitate the recording of both types.

All manufacturers are acutely aware of the problem of substitution by the contractor. It is being exacerbated by the lure of cheap and sometimes fake imports. Consultants are also affected as they spend considerable time and effort selecting a product, finish or electrical/mechanical system as part of their design responsibilities.

Relevant worksection

0171 *General requirements*

Related TECHnotes

GEN 014 *Submissions and testing*

SPECIFYING QUALITY

INTRODUCTION

Communicating the requirements for quality is the main technical function of the specification. This TECHnote outlines how the NATSPEC specification system may be used to promote quality in construction projects.

DEFINING QUALITY

Quality must be defined; it cannot be managed if it is not defined. Quality can have different meanings for different people in different situations. In construction this problem is amplified because the responsibility for a project is divided between many different people, within many organisations. Therefore, agreement on a defined quality level between all parties, and how it is to be measured, is key to achieving the desired quality to the satisfaction of the principal.

QUALITY LEVEL

Several factors drive the desired quality level of a project and its components; the main factor being anticipated life. It would be a false economy to poorly construct something which must last for many years or over-design something which may only be required to last a number of weeks.

Other factors that influence the desired quality level include:

- The purpose of the building - Prestige or utility, flexibility or permanence.
- Required functional performance - Design repetition or one-offs, environmental.
- User perception - Convenience, comfort, ease of maintenance and repair.

WHEN CAN QUALITY BE ACHIEVED?

There is a common misconception that the quality of a project can be completely controlled during the construction stage. However, the level of quality that can be demanded during construction cannot be higher than that which is specified in the contract documentation, without additional cost.

The quality of a project is therefore dependent on documentation and supervision. The contract documentation includes the conditions of contract, the specification, the drawings and the schedules.

To achieve quality, care must be taken in material selection, documentation, workmanship and supervision. This does not necessarily increase time and cost, however these factors must be considered and balanced when defining the quality level required. Failure to take care may lead to poor quality and increased costs with greater rework, repair and maintenance required.

ROLE OF THE SPECIFICATION

Whilst the specification is a multi-purpose document, its primary role is to define precisely and succinctly the quality required and the processes necessary for achieving it. This also includes, but is not limited to, defining clear acceptance criteria for any item of work.

If specified acceptance criteria match the agreed defined quality level, then ultimately, conformance with the specification will achieve quality.

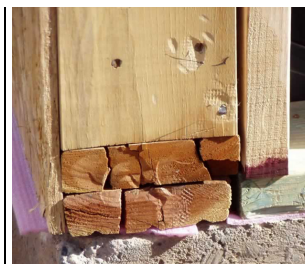
USING NATSPEC TO ACHIEVE QUALITY

The NATSPEC worksection *Templates* include the construction processes required for each particular item of work and also define clear industry standard acceptance criteria in the form of tolerances, performance requirements and testing and certification requirements. All can be modified if necessary, to suit the defined quality levels agreed for each individual project and its components.

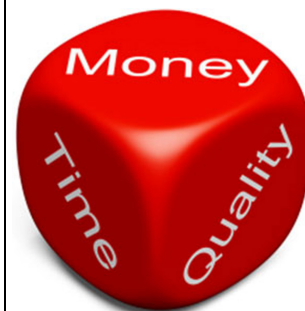
NATSPEC promotes the achievement of quality through coordination of the contract documents. Guidance text discourages duplication of information included on the drawings or within the specification, to avoid potential discrepancies and ambiguity. Duplication of information within the specification is minimised by reference to relevant worksections.

NATSPEC references and monitors updates to relevant Australian and International standards, including those cited within the NCC. Where standards define alternative levels of service, NATSPEC provides prompts to be completed by the specifier. It is essential that the specification defines the requirement, as blanket references to standards may not achieve the desired quality.

NATSPEC and AUS-SPEC also cover the requirements for project Quality Management Systems based on AS/NZS ISO 9001 and the provision of project Quality Plans in the **Relevant worksections** listed in the sidebar.



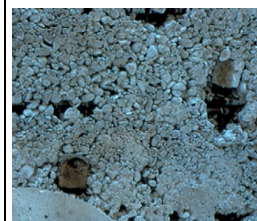
Poor quality timber construction – Split base-plate used.



“....If the building contract documents permit a sow’s ear then all the quality control in the world cannot demand a silk purse.....”



Inspection to confirm quality level achieved.



Poor quality concrete – Honeycombing and timber.

Relevant worksections

- 0010 Quality requirements for design (AUS-SPEC).
- 0121 Tendering
- 0160 Quality.
- 0161 Quality management (Construction) (AUS-SPEC).
- 0162 Quality (Supply) (AUS-SPEC).
- 0163 Quality (Delivery) (AUS-SPEC).

Advantages of using a NATSPEC Product Partner Branded Worksection



What were the advantages of using the NATSPEC system?

"We extensively use the NATSPEC worksections as a basis for all our specifications as our office standards are now set to this system. After years of refinement across multiple building typologies and designs we have been able to utilise the specifications as an important document to accompany the Contract documents. The NATSPEC system provides us with the confidence that we have the most up-to-date standards and information for our project specifications, limiting out-of-date information and errors. Utilising the expertise already within the NATSPEC system allows us to collate the specification information and streamline the specification writing which usually occurs at the back end of the Contract documentation phase. NATSPEC allows us to be confident that this information is accurate and up-to-date to complement the design and construction documents, which removes the pressure and gives us peace of mind."

What are the lessons learnt from using Branded Worksections?

"Extensive integration of Branded Worksections within the base trade specifications have allowed us to utilise the most recent up-to-date product information to match the selections of the designed building. The branded information has proven invaluable to ensure compliance and selection of the correct information to ensure discrepancies and differing information across the contract documents are minimised and eliminated. Utilising the NATSPEC worksections and Branded Worksections allows a starting point that we know is correct and will ensure minimal clarifications are required during the Contract Administration phases. Up-to-date and correct information on product and system installation, execution and warranties provides us with the confidence to ensure the finished product is of an extremely high design and finish and provides the client with peace of mind and a finished product that will exceed their expectations."

(Case Study Magazine 2021-2022) **Damien Sita, Associate, Hunt Architects**



"Certain elements of the project were specified using supplier-specific specifications generated efficiently by using NATSPEC's Product Partner specifications. Minor adjustments are easy as these specification worksections fit easily into the project format." (Case Study Magazine 2018) **BVN Architects**



"Writing an architectural specification for contract documentation requires precise and accurate description of the products, execution methods and procedures. With NATSPEC, MGS were able to access and download all of the latest and up-to-date information on specific products available in the construction industry and ensure that the products meet Australian Standards (AS) and National Construction Code (NCC) via the live website. With the product specification being constantly updated according to the industry standard, the risk of specifying non-standard products for our architectural or interior projects was significantly reduced. Throughout our office we have found it easy to select the required products according to their specific worksection categories that can be customised according to the specific project requirements." (Case Study Magazine 2016) **MGS Architects**

"At The Regent, we were able to assess comfort and thermal requirements and use the NATSPEC branded worksections to specify insulation and flooring underlay that would suit the needs of users and authorities. We selected powder coating and roofing that would perform at industry best practice levels whilst contributing positively to the overall aesthetics of the building."

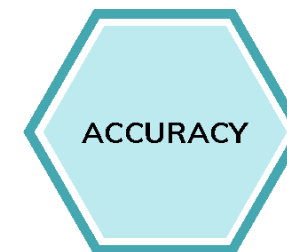
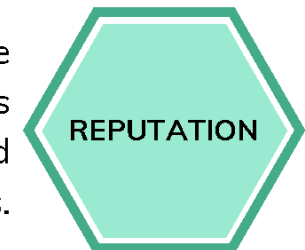
"The NATSPEC approach to specification preparation in many ways removes the guess work from what some people do as a traditional 'cut and paste' specification. Many of us have seen first-hand the problems that this gets projects into. We highly recommend NATSPEC to any firm or practice that is seeking to adopt a specification package that saves time, reduces errors and ultimately manages costs." (Case Study Magazine 2021) **Spowers Architects**

NATSPEC Product Partners support you. Support them and their products in your next project by selecting Branded Worksections in SPECbuilder or downloading for free from www.natspec.com.au.



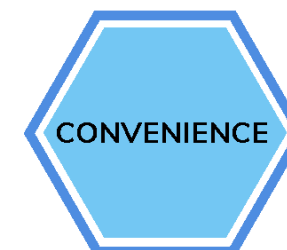
Branded Worksections are developed in conjunction with NATSPEC Product Partners. Product performance characteristics are correctly documented to minimise substitution.

Branded Worksections are part of NATSPEC, the National Building Specification. NATSPEC has been trusted by designers, consultants and contractors for 48 years.



Like all NATSPEC specifications, Branded Worksections are updated every April and October. They align with current regulations, standards and industry practices.

Branded Worksections are up to 90% pre-edited, reducing time and risk. Minimise editing time by selecting options and adding project-specific information.



Branded Worksections are easy to add to your project specification in NATSPEC's online specification compilation software SPECbuilder.

Branded Worksections help to deliver projects on time and on budget. NATSPEC creates economies of scale to save specifiers time and money.



"Specifiers are assured that Branded Worksections show conformance with the appropriate standards referenced by NATSPEC."

Scots All Saints College Junior Campus, Bathurst, NSW



Drew Dickson Architects were engaged by Scots All Saints College to design and document a new Innovation Centre on their Junior Campus in Bathurst, NSW.

Located in the nexus between the science department, the design & technology department and general learning classrooms, the Innovation Centre is seen as the central learning hub of the Junior Campus.

The building was designed as a student-focused learning facility offering a variety of structured learning, group study and break-away opportunities.



Main entry portal and arrival view when approached from the school grounds

The open plan 'workshop' aesthetic and nature of the building allows for experimentation with robotics, machines, science and the wider STEM curriculum. The opportunities are expanded, with a double-height space allowing for controlled environment height-drop experiments and flying machines tests.

What was unique about the project?

A unique element of this project was the requirement to showcase technology and innovation. The internal space was intentionally left exposed to allow the students to learn and understand about the construction of the building. Consideration was also given to how technology could interface with the façade.

The façade was designed and specified using thermally insulated panels to achieve the thermal comfort and desired noise levels within the space.

The building form, colour and patterning

was refined during the design and development process, with many ideas interrogated. The final outcome provides a subtle façade backdrop that allows for bursts of vibrant colour through lighting technology projected onto the façade, truly making technology the focal point of the building.

When not on show, the tonal nature of the façade compliments the existing buildings on campus. It also stands out against the vibrant green lawn leading up to the building backdropped by native trees and a brilliant blue sky.

The angles of the building take inspiration from the skillion roof forms on campus. This can be seen through the entry portal form, the main roof line and the wrapping window head. The sunshade awning hoods to the mezzanine level windows emphasise these angles as well, playing between the vertical façade panels and the roof angle.

Drew Dickson Architects worked closely with the awning manufacturer to create a custom bracket-less awning system. These awnings were specified for their sleek modern appeal that compliments the architecture.



Internal open learning environment with connection to the mezzanine level

Vast lineal glazing suites allow for natural light and a strong indoor/outdoor link with the surrounding landscape and student circulation paths, reinforcing the idea of collaborative and open learning.

What were the advantages of using the NATSPEC system?

The implementation of NATSPEC as the template for the specification was

essential for this project. NATSPEC created the framework, benchmarks and quality points we could rely on during the construction process. The result was a high-quality build, being a credit to the builder and NATSPEC alike.



Feature window with angled sunshade awning hood

Utilising the available land to its maximum potential, the Innovation Centre provides an outstanding, flexible learning facility for the school community of Scots All Saints College for many years to come.

What are the lessons learnt from the project that you are prepared to share with other designers?

Drew Dickson Architects used Virtual Reality as an additional resource in designing this building. This allowed the design team to experience the volume of the space and identify the various material junctions needing a higher detailed interface. Drew Dickson Architects learnt to utilise such technology as a tool to create the best building outcome.

Architect: Drew Dickson Architects

Project Manager: EPM

Structural/Civil Engineer: Calare Civil

Services Engineer: Waterman

Quantity Surveyor: Walton Smith Consultants

Builder: Hines Construction

Photography: David Roma Photography

GETTING HELP

INTRODUCTION

This TECHnote summarises the various ways that NATSPEC provides help to specification writers.

NATSPEC Guidance

NATSPEC worksections include extensive *Guidance* text with suggestions on filling in prompts, alternatives, and background material. *Guidance* is in Microsoft Word hidden text format which can be turned on or off, and appears like this:

NATSPEC does not recommend the use of Scope of Works clauses. If you wish to include such a general description you may add it here, or in the corresponding location of selected worksections.

If you work with an office master, you may find it convenient to add your own guidance notes using NATSPEC's hidden text styles.

See NTN GEN 029 for more on design and specification *Guidance* text.

NATSPEC Optional style text

Some worksections include *Optional style text in this font (blue with a grey background)* that covers items specified less frequently. It is also a Microsoft Word hidden text format which can be incorporated into *Normal* style text, where it is applicable to a project, by highlighting the text and changing the style and format.

NATsource

NATsource lists in excess of 1200 documents cited in the specification packages. Use it to check document titles, currency, content and publishers. Access *NATsource* via SPECbuilder/Resources/Standards Info. Changes to cited standards are summarised in *SPECnotes*, a quarterly newsletter for subscribers.

NATSPEC TECHnotes, TECHreports and AUS-SPEC TECHguides

TECHnotes provide guidance of a more general nature that either relates to several worksections, or does not fit into the normal worksection structure, TECHreports provide more detailed information on specification issues and TECHguides provide guidance on compiling contract documentation for local government projects. All these documents continue to be developed and updated. The latest versions are available in the Technical Resources area of the NATSPEC website or via the Resources link in SPECbuilder.

NATSPEC Website

See www.natspec.com.au. NATSPEC's website has a range of material including:

- Details of NATSPEC specification packages, including abstracts of worksections.
- A link to SPECbuilder and Domestic Online.
- A link to NATSPEC Class 2 Reference Specification.
- Links to Product Partners' websites arranged by worksection.
- Information on publications relating to specification writing.
- Answers to frequently asked questions (FAQs) on specification writing, purchasing NATSPEC, getting started with NATSPEC and word processing.

NATSPEC BIM Portal

The BIM Portal is home to the *NATSPEC National BIM Guide* and related documents. It also includes resources and tools to assist the implementation of BIM in the construction industry. To go to the BIM Portal, click on the *NATSPEC BIM* logo on the NATSPEC website.

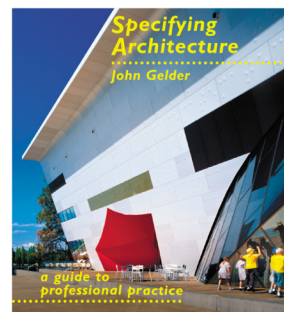
NATSPEC Training

NATSPEC provides training in specification writing-related subjects.

For details of monthly *Getting started with NATSPEC* webinars and annual training courses in venues around Australia see www.natspec.com.au.

Videos of previous courses are also available on the website. Subscribers are notified of upcoming training courses.

Relevant Publications



Specifying Architecture - a guide to professional practice

NATSPEC assistance

NATSPEC does not provide a design or specification service but we can assist with specification writing techniques and dealing with problems using SPECbuilder and NATSPEC in Microsoft Word. If you have problems finding what you want, feel free to contact us directly.

CONTACT INFORMATION

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Rouse Hill Anglican College, NSW

TERROIR

Rouse Hill Anglican College is a campus consisting of buildings completed between its founding in 2002 and through to the current project phase which is due for site commencement in June 2023.



View of eastern façade and external learning areas

There have been three project phases completed between 2014 and 2021, two of which are the continuation of the school's masterplan which involves the relocation of the Junior School to the northern portion of the school site, separating the school into discernibly distinct Senior and Junior School areas. The upcoming fourth phase is the first Senior School project which will see a considerable upgrade to the schools existing Senior School teaching facilities and surrounding external teaching spaces and supporting infrastructure.

What was unique about the project?

A unique aspect of the project is the way in which our design approach enables the school's shift in teaching pedagogy. The existing buildings and their internal spaces were compartmentalised to support a traditional mode of teaching; our challenge was to break this model and develop a design approach that supported a more student-centred learning model. In parallel to this design exercise the school's spatial needs had exceeded original enrolment projections.

The design approach over the three completed phases has evolved to respond to much valued user feedback as well as changes to NNC Australian standards and other relevant statutory requirements. The first of these phases drew upon an existing base building form to give a visually cohesive

approach to the northern area of the school campus. The design approach for the interior spaces involved rigorous interrogation of the existing internal layouts to provide greater flexibility, adaptability, and connections between the learning spaces. Each of the new Junior School buildings includes co-joined general learning areas that open onto a multipurpose central learning area, there is also the addition of a central mezzanine space which is a significant shift from the traditional classroom.



View of communal walkways connecting the learning spaces

What were the advantages of using the NATSPEC system?

There are many advantages of using NATSPEC on our commercial projects, particularly within the education sector. Confidence in compliance and the assurance that our documentation outputs are in line with industry standards is of the utmost importance to our practice and our clients. Using NATSPEC also allows us to develop the architectural specification in parallel with drawings and schedules achieving an efficient documentation workflow. The rigor of documentation coordination which NATSPEC helps enforce is a key tool in ensuring quality assurance and mitigates discrepancies in our documents which allows us to de-risk our clients from budget pressures caused by variations.

Our practice is driven by delivery of excellence for our clients and user groups. Features such as clearly defined project hold points and prototypes allows us to work cooperatively with both contractor and client ensuring all parties are satisfied with building methodologies and the final level of finish prior to hand over.

What are the lessons learnt from the project that you are prepared to share with other designers?

A challenge in any project is dealing with errors and omissions however, we also believe that these can form important 'lessons learnt' which in turn allows us to improve and strengthen our documentation protocols and coordination. In the case of Rouse Hill Anglican College, the issue of coordination and navigating around existing infrastructure provided a challenge. Another significant change in delivery of the three completed projects has been supply chain and builder's substitutions, notably over the past two years where timber supply and COVID have both had a significant impact on availability, site access and construction program.



View of Internal flexible Central Learning space and mezzanine

Using NASTPEC as our specification template assisted in navigating around these challenges. Features such as warranties, hold points for inspections and overall compliance meant that there was a clear dialogue between architect and contractor in terms of the required level of quality that had to be achieved.

Architect: TERROIR

Client: The Anglican Schools Corporation

Builder: Junior School Stage 1 - FAL Construction Group
Junior School – K Block COWIN Building Group
Junior School L Block - Cash McInnes Projects Pty Ltd

Senior Studies Building – Belmadar

Photography: Brett Boardman
Renders provided by TERROIR

BRANDED vs GENERIC WORKSECTIONS

BRANDED OR GENERIC?

The foundation unit of the NATSPEC specification system is the worksection. NATSPEC worksections are selected and customised by the specifier to produce a project specification. In some instances, the specifier can choose between a generic worksection and a branded worksection when compiling the specification. This TECHnote defines the alternatives and outlines their advantages.

BRANDED WORKSECTION	GENERIC WORKSECTION
Definition A NATSPEC branded worksection is developed by NATSPEC in conjunction with the manufacturer, known as a NATSPEC Product Partner. It is a MS Word document <i>Template</i> which follows NATSPEC style and format and can be customised by the specifier.	Definition A NATSPEC generic worksection is a MS Word document. It is a comprehensive <i>Template</i> which the specifier must customise by completing prompts, adding relevant material and deleting material which is not applicable to the particular project.
Classification Each branded worksection is based on the associated NATSPEC generic worksection and shares the same classification number.	Classification NATSPEC worksections are classified and sequenced in a logical order corresponding to common Australian construction industry sequence.
Advantages <ul style="list-style-type: none"> Provides an alternative to a generic worksection where a particular product has been selected at the design stage. Associated generic material not manufactured by the Product Partner is still provided. Minimal customising required as the <i>Template</i> has been approximately 90% pre-edited in conjunction with the Product Partner. Current product information is readily available and accessible via hyperlinks between the <i>Template</i> and the Product Partner's website reducing research time and facilitating early decision making. The possibility of product substitution by the contractor may be reduced as the unique performance characteristics of the product are clearly specified. 	Advantages <ul style="list-style-type: none"> Provides comprehensive coverage of a particular work area. Adaptable for open proprietary specification where more than one brand or model number is acceptable. Adaptable for closed proprietary specification where a branded worksection is unavailable. Useful where the inclusion of brand names is not permitted. The <i>Template</i> can be modified to create a new worksection where a NATSPEC worksection is not available.

Regulations, standards, client and designer requirements will all have some influence on whether a generic or branded worksection is appropriate.

SUBSTITUTION

Manufacturers are aware of the problem of substitution by the contractor. To maintain the contractor's contractual responsibility regarding supply, NATSPEC allows for substitution. However, text in the *0171 General Requirements* worksection requires the contractor to provide the contract administrator with the appropriate technical information to make an informed decision regarding the proposed substitution. See related TECHnote *GEN 006 Product specifying and substitution*.

Worksection Structure

Each worksection is divided into:

GENERAL - applies to the worksection as a whole and includes cross referencing, standards, interpretation, tolerances, submissions and inspections.

PRODUCTS - describes the basic materials, components and fabricated items.

EXECUTION - sets out the construction performance criteria to prepare the substrate, assemble materials to produce an installation and carry out the works.

SELECTIONS - contains schedules that refer to the selection of proprietary products or to generic products by their properties.



Open specifications, such as descriptive, performance or reference specifications, can be satisfied by more than one product. An open proprietary specification is where there is more than one acceptable brand or model number.

Closed specifications can be satisfied by only one product. A single brand or model number may be nominated. However, some specifications which seem open are actually closed as only one product on the market will satisfy the criteria specified.

Related TECHnotes

NATSPEC TECHnote *GEN 006 Product specifying and substitution* sets out the difference between proprietary and generic specifying, and explains the policy and means of managing contract variations related to requests for substitution.

Related Worksection

0171 General requirements

Craigmore High School STEM Facilities, Blakeview, SA

+ TRIDENTE BOYCE

This is a project about transition, recycling and reuse, and a development that fosters technological innovation and education. It demonstrates that seismic bracing can be successfully integrated into a transparent and flexible contemporary learning environment.



Internal view – the transparency

Craigmore High School is located in the northern suburbs of Adelaide and is a co-education school of over 1100 students. The existing built form is typical of many schools designed in the 1970 's where most buildings are solid, inward looking and cellular offering little connection to the external environment. This building was no different.

The South Australian Government implemented a STEM program rollout throughout its' schools that required re-purposing of existing infrastructure to accommodate the delivery of these programs at the same time as realising environments conducive to 21st century

learning pedagogies. All whilst working to modest budgets.

What was unique about the project?

The core principles adopted during the development of the Craigmore High School Stem facilities were to maximise transparency, flexibility and connectivity. As a result of the major refurbishment the existing building structure required upgrading to meet current earthquake standards. This was integrated with the interior design to provide a unique identity for the STEM precinct within the school.

What were the advantages of using the NATSPEC system?

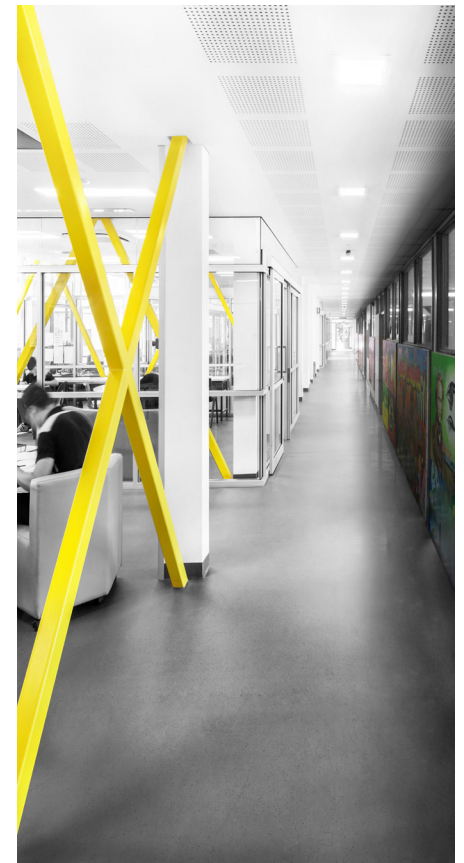
NATSPEC, a required tool of the Department for Infrastructure and Transport, was tailored to successfully combine its comprehensive performance requirements and compliance to Australian Standards with project specific requirements to enable these special facilities to be realised and the high standard of quality achieved.

The new facilities allow the focus to be on real-world problems based around sound engineering design processes with hands-on inquiry and open-ended exploration. The open, integrated and co-located facilities foster the productive teamwork required to achieve this.

What are the lessons learnt from the project that you are prepared to share with other designers?

This project has transformed the ground floor of the traditional two-storey classroom block into a vibrant, light and transparent learning centre to promote collaborative learning. The STEM facility successfully encourages crossover of core disciplines to inspire students to explore avenues that they may never have contemplated.

This simple yet effective intervention is flexible, light filled and provides a clear demonstration that sound building fabric can and should be reused.



Internal view – the transition

Architect: Tridente Boyce Design Studio

Builder: MYKRA Pty Ltd

Photographer: Simon Cecere



Internal view – the exposed earthquake bracing



HOLD POINTS AND WITNESS POINTS

INTRODUCTION

Hold points and *Witness points* are construction stages which may need additional inspection, verification and documentation to make sure of:

- The safety of the personnel, environment and the public, before proceeding.
- The technical quality and any legal requirements have been satisfied.
- The next stage in the construction process can be completed.

Verification measures will vary with the specification method. For performance specifying, verification involves testing. For specifying by reference, verification is to a standard, or through third-party certification to that standard. Verification procedures are documented in the specification Inspection and test plan designated as *Hold points* and *Witness points*.

HOLD POINT

A *Hold point* is a mandatory verification point beyond which a work process cannot proceed without authorisation by the contract administrator. *Hold points* are usually assigned to those critical aspects of the work that cannot be inspected or corrected at a later stage because they will no longer be accessible. The relevant work cannot proceed until the contract administrator is able to verify the quality of the completed work and releases the *Hold point*.

Hold points can be nominated by:

- The principal, in the contract documents.
- The contract administrator, with a Non-conformance or Corrective action report.

Use *Hold points* sparingly as each potentially affects project duration and cost.

WITNESS POINT

A *Witness point* is an identified point in the work process where the contract administrator may review, witness, inspect or undertake tests on any component, method or process of works. The contractor is required to notify the contract administrator who may or may not take the opportunity. The subsequent activity however, may proceed.

CONTRACTOR'S ROLE

The contractor is responsible for satisfying the documented contract requirements and planning, developing and maintaining a system assuring the detection of non-conformances and control of their resolution. The issue of a Non-conformance report or a Notice of non-conformance automatically creates a *Hold point*.

AUS-SPEC APPROACH

AUS-SPEC is a specification system for the life-cycle management of assets. In AUS-SPEC *Templates*, *Hold points* are part of:

- *0136 General requirements (Construction)*, *0161 Quality management (Construction)* and *0167 Integrated management* worksections. The Quality plan for the works incorporates checklists, inspections, testing and documentation to make sure that the works comply with the contract documents. *Hold points* and *Witness Points* should be included in the checklists. Examples of submissions include a quality plan or soil compaction test results for a prepared sub-base.
- The summary of *Hold points* and *Witness points* in the annexure of each construction worksection provides a checklist for programming sequential activities and communication obligations.
- A Maintenance management plan combines the requirements of the Technical specifications, Quality manual and the Quality plan, for assuring quality in construction projects. The Maintenance management plan covers policy, organisation, selected procedures, maintenance planning and Activity specifications for maintenance activities. The Activity specifications form the core of the document and include the nominated *Hold points*, e.g. test results confirming compliance of materials like asphalt or requirements of the work order for the proposed maintenance work.

AUS-SPEC TECHguides provide further guidance on the use of *Hold points* and *Witness points* for the AUS-SPEC specifications.

NATSPEC APPROACH

NATSPEC *Templates* do not nominate *Hold points* in *Normal* style text. The **INSPECTION** clause in individual worksections includes *Guidance* text for nominating *Hold points* where they may be appropriate for inclusion in a project specification, e.g. inspecting formwork and reinforcement prior to placement of concrete.

NATSPEC *Templates* use **INSPECTIONS**, **Notice** in lieu of *Witness points*. TECHnote GEN 014 provides more information on submissions and testing.

AUS-SPEC definitions:

Hold point: A mandatory verification position in the contract beyond which work cannot proceed without designated authorisation.

Witness point: A nominated position, in the different stages of the Contract, where the option of attendance may be exercised by the Superintendent, after notification of the requirement.

Non-conformance report (NCR):

A mandatory (standard format) submission by the contractor that details the non-conforming work and the contractor's proposed disposition of the non-conformance.

Notice of non-conformance (NNC):

Formal instruction to the contractor of product non-conformance to documented requirements. It automatically creates a *Hold Point* and requires a non-conformance report (NCR) from the contractor.

Corrective action request (CAR):

A formal advice/instruction to the contractor requesting action to eliminate the cause of a detected nonconformity.

Disposition (of non-conformity): A remedial action to be taken concerning material, components or product about which a decision has been made. The resolution of a non-conformance. (This should not be confused with Corrective Action.)

NATSPEC definitions:

Hold point: The activity cannot proceed without the approval of the contract administrator.

NATSPEC defines **Hold points** in *Optional* style text in *0171 General requirements* worksection along with *Guidance* text on minimising contractor intervention of this kind to *accord with principles of quality assurance and risk allocation*.

Contract administrator: Has the same meaning as 'architect', 'superintendent' or 'principal's authorised person' and is the person appointed by the 'owner' or 'principal' under the contract.

Relevant documents

0136 General requirements (Construction) (AUS-SPEC)

0161 Quality management (Construction) (AUS-SPEC)

0167 Integrated management (AUS-SPEC)

0171 General requirements
AUS-SPEC TECHguides

TECHnote GEN 014 *Submissions and testing*

Austroroads AGPD03/22 *Guide to project delivery – Part 3 Contract management*.

Austroroads AGPD05/18 *Guide to project delivery – Part 5 Road construction quality assurance*.

Why it's Critical for Construction to Continue down the Certification Pathway



Chad McLean, Certification Manager at Warringtonfire Australia, discusses why it's vital for the construction industry to standardise the adoption of third-party certification for fire protection products to offer greater life safety, ensure compliance and avoid costly remedial works.

The Australian construction market is booming. Right across the country, from New South Wales, to Victoria, to Queensland, there are major demands for new buildings and public infrastructure.

Putting it into numbers, there is \$237 billion worth of projects in a five-year pipeline. \$15 billion of that figure was added just last year. As Infrastructure Australia's Market Capacity 2022 report indicates, this equates to 6.7%

growth, which is fantastic for the country's prospects and outlook.

What it also means is that there's a significant opportunity to get all new buildings, as well as any upgrades to existing stock that will be part of this investment, 'right first time'. This is particularly important when it comes to fire safety products as they represent a critical aspect of upholding building and occupant safety while mitigating costly reworks further down the line.

For architects, specifiers, consultants and all other building stakeholders, third-party certification is key. However, across the construction sector, certification is far from standard practice. It remains somewhat misunderstood, and the benefits have yet to be fully recognised or unlocked. All of this will need addressing as we move forward.

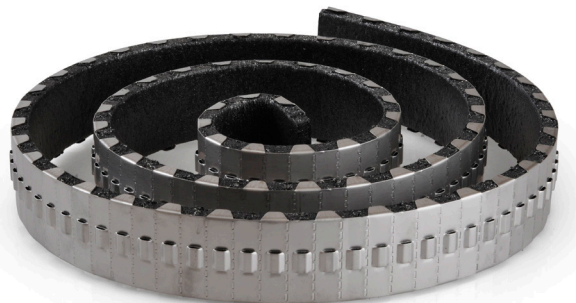
Risks of relying on test reports alone

While Australia's built environment has grown exponentially in recent years, there remains significant traceability challenges around the building products used.

To illustrate this, typically, for passive fire protection (PFP) products such as fire doors, fire collars, sealants, or door hardware to be accepted, all that would need to be presented would either be a test report or an assessment report that the product complies with the associated standard.



PROMASEAL FC Retrofit Collar has been certified as part of the Certifire scheme



PROMASTOP® UniCollar has been certified as part of the Certifire scheme



In addition to this, products that are sourced from overseas may not have been tested or assessed in ways that are compliant with the National Construction Code (NCC). This introduces further risk that may go unnoticed until it is too late.

However, although testing is important, product certification provides an added layer of assurance for building certifiers, and those who have specified, procured, or installed the products. This is because a test report is not a full representation of a manufacturer's factory processes or quality control procedures. Rather, testing is a one-off snapshot of a product-line, whereas independent third-party certification provides traceability.

Moving toward specifying products with third-party certification

To combat these issues, and to provide added reassurance throughout the supply chain, it is imperative that the industry uses products that are third-party certified by approved bodies and experts. Instead of viewing certification as a cost, it should be seen as a saving.

From a business perspective, arguably, the biggest benefit is that of quality assurance and risk mitigation. By specifying a product that has achieved third-party certification, such as Warringtonfire's Certifire scheme, stakeholders can be confident that they are receiving a product that fits within the scope to which it should have been tested to and is fit-for-purpose.

Alongside this, there is additional peace of mind that the product, or product range, has undergone an evaluation; the manufacturer's factory has been through a Factory Production Control (FPC) audit; and the product has been sampled and tested. This then increases traceability and any defective products or issues with quality can be remedied.

Third-party certification also brings a level of risk mitigation. For products that only have first-party testing and assessment, the onus is on the building designer, specifier or building certifier to understand the product. This means ensuring it meets the standard and National Construction Code, before signing off on its use. In reality, this can often involve combing through lengthy test and assessment reports, which slows down decision-making and construction projects.

Needless to say, with an infrastructure project pipeline worth \$237 billion, any activity that can streamline the processing while improving life safety should be taken.

Certification – A safer future

Both the country and construction industry are in one of its most exciting, expansive and progressive eras. As we head into these next five years, it's important that those who have responsibility for our buildings do what they can to ensure they are safe for years to come. Meanwhile, helping to curb unnecessary costs through costly reworks, or slowing progress, also needs to be front of mind. Third-party certification is critical to helping solve all these challenges.

For more about Warringtonfire, third-party certification and its Certifire scheme, please visit <https://www.warringtonfire.com/certification-services/fire-certification/certifire>

SUBMISSIONS AND TESTING

INTRODUCTION

This TECHnote addresses the specification of submissions and tests by the contractor which may be required during the construction process.

SUBMISSIONS

Contractual

Submissions which require approval before work can proceed create hold points in the construction program. Submissions which may create hold points include:

- Authority approvals.
- Calculations.
- Certification.
- Design and install documentation.
- Fire hazard properties.
- Inspection reports.
- Operation and maintenance manuals.
- Products and materials.
- Prototypes.
- Records.
- Samples.
- Shop drawings.
- Subcontractors.
- Technical data.
- Tests.
- Warranties.

Requesting these submissions requires the contract administrator to perform a duty and accept responsibility for that duty.

For information only

If submissions are required for information only, they are witness points, intended to assist the contract administrator. Submissions which may form witness points include:

- Non-contractual construction programs.
- Inspection and testing plans.
- Accident reports.
- Inspection reports.
- Type test reports.
- Site photographs.
- Environmental management proposals.
- Product certification and manufacturers' data.

Do not request submissions indiscriminately. Fewer should be required under a quality assurance scheme.

Submission approval and acceptance

NATSPEC, as a generic technical specification does not contain management systems to handle the approval process. If an approval is required before implementation, consider nominating a hold point, to eliminate ambiguity. Consider documenting approval criteria and the acceptance procedure.

TESTS

Inspection and testing of the works can be requested in the documentation.

Testing and laboratory services may be procured by one of the following methods:

- Principal appointment, employment and payment.
- Principal appointment and employment but contractor payment.
- Contractor appointment, employment and payment.

NATSPEC worksections, which address the contractor, assume the third option applies.

The contract administrator may call for an inspection that may involve a hold point. Indicate in the worksections which tests, if any, are hold points and make sure the affected parts of the works are not concealed, until directed.

Minimise the number of these tests, as late approval can lead to delay claims.

Testing authorities

If an Accredited Testing Laboratory is required for particular site tests, document in the appropriate NATSPEC worksection. Otherwise, the contractor may carry out site tests. If the testing authority must also be independent, document in the appropriate NATSPEC worksection or in the *0171 General requirements* worksection if it is a global requirement. NATA maintains a register of accredited testing laboratories.

Product certification schemes

JASANZ has an online register of certified organisations, Conformity Assessment Bodies (CABs) and products.

If a JASANZ CAB is required for a particular product or system, document in the appropriate worksection



Product certification schemes

Include:

- The Australian Gas Association (AGA)
- The Australian Communications and Media Authority (ACMA)
- The CodeMark Certification Scheme
- Responsible Wood (AS 4707, AS/NZS 4708)
- Chain of Custody for forest products (AS 4707)
- WaterMark Certification Scheme (AS 5200.000)
- Water Efficiency Labelling and Standards (WELS) Scheme

Relevant websites

National Association of Testing Authorities, Australia
www.nata.com.au

Joint Accreditation System of Australia and New Zealand
www.jasanz.org

Relevant worksections

0160 Quality
0161 Quality management (Construction) (AUS-SPEC)
0171 General requirements

Related TECHnotes

GEN 004 Shop drawings and samples
GEN 006 Product specifying and substitution
GEN 009 Hold points and witness points
GEN 010 Mechanical commissioning strategies

NATSPEC'S USE OF STANDARDS

QUALITY AND STANDARDS

'... the level of quality that can be policed in the construction stage cannot be higher than that which is spelt out in the contract. If the building contract documents permit a sow's ear then all the quality control in the world cannot demand a silk purse ... True quality control starts with the documentation for a project and in the project specification in particular ...'

'... for many years an army of experts has been producing minimum quality standard specifications for reference in a variety of industries, including the building industry, and in regulations relevant to those industries.'

'Nothing could be more necessary, more logical, more timely or more useful in today's building industry or more responsive to the call for quality control than a specification system tied to relevant Australian standards. That is what NATSPEC sets out to be.'

NATSPEC AND AUSTRALIAN STANDARDS

'The NATSPEC method of using relevant published standards is to incorporate them by reference and not to quote, transcribe, repeat or paraphrase the text of the standards. To do so would not only interfere with copyrights but would also breed errors of transcription. It would also increase the physical size of NATSPEC and its derivative specifications, unnecessarily.'

'NATSPEC deliberately avoids blanket referencing of standards, the system by which specifiers expect contractors to allow for every conceivable and inconceivable standard in the world.'

'NATSPEC provides a checklist of possible relevant standards. It also provides a means of exercising options contained in standards. It also allows for manufacturer's recommendations to be referenced or 'called-up' in the same way as standards. NATSPEC recognizes the need for care in the specifying of standards.'

- Bryce Mortlock, RAIA Practice Division Report, August, 1989.

STANDARDS IN NATSPEC

NATSPEC continues to incorporate standards by reference to the standard's designation, number and year of publication. Where there are options in standards and decisions to be made, NATSPEC provides prompts and guidance. NATSPEC, with research and feedback from subscribers and industry, fills gaps that the consensus approach can leave out of standards.

NATSOURCE

The publication NATsource includes all NATSPEC cited standards, and their abstracts. It is provided to subscribers as part of their package, as well as being available for purchase.

STANDARDS TO OWN

The following should be considered:

- Design standards cited in the NCC and other regulations, with which you are legally bound to comply.
- Design standards that relate to your discipline and project type.
- Standards and handbooks that relate to construction.
- Lists of suggested standards for the offices of architects, landscape architects, structural, mechanical, hydraulic and electrical engineers provided in the paper *Specification Writing* on the NATSPEC website, under Suggested Standards for offices.

Whether the owning of a standard should be regarded as essential is a matter of professional judgement. Standards relating only to product manufacture or type testing may be considered non-essential provided compliance can be demonstrated by other means, such as certificates of compliance and labelling schemes.

KEEPING STANDARDS CURRENT

- Every three months, NATSPEC lists the most important of these standards in SPECnotes, which is available on SPECbuilder.
- Every six months, in April and October, NATSPEC issues updated specification material to its subscribers via USB and SPECbuilder.

Some National and International standards cited by NATSPEC



Australian Standards.



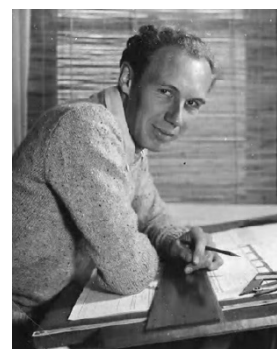
British Standards Institution.



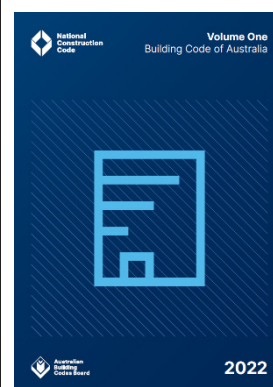
American Society for Testing and Materials.



International Organization for Standardization.



Bryce Mortlock - Father of NATSPEC, RAIA Gold Medallist.

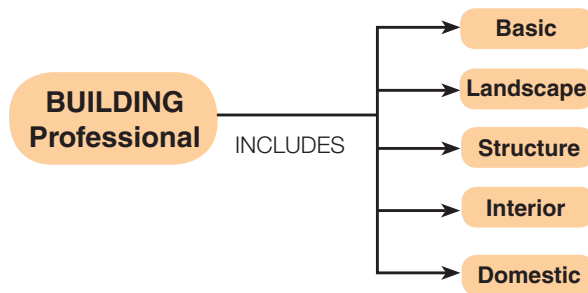


Relevant Websites

NCC
www.abcb.gov.au/

Acts and regulations
www.austlii.edu.au/

Standards Australia
www.standards.org.au/



Professional Package Inclusions

- Twice yearly update including changes to the National Construction Code and Standards.
- SPECbuilder online specification compilation software compatible with all versions of Windows, Macintosh and Linux operating systems.
- Editable worksection Templates in Microsoft Word *.docx format. See the National Worksection Matrix for the worksections included in this package and NATSPEC Worksection Abstracts for a summary of each worksection's content and application.
- Hidden text Guidance for developing project specifications for tender and contract documentation.
- Fully searchable pdf version of package with highlighted updates.
- Instructional guides and technical resources.
- Package USB for backup.
- Unlimited use of Domestic Online.
- Branded Worksections are meticulously prepared documents that are editable with guidance text, and product options. This ensures consistency, clarity, and adherence to good industry practices for achieving success in building projects.

Subscribe to NATSPEC at www.natspec.com.au and transform your specification experience.
Call 1300 797 142 or **email:** mail@natspec.com.au for assistance.

NATSPEC

the National Building Specification

Government departments and clients prefer NATSPEC

In the majority of Australian States and Territories, NATSPEC specifications are required for building projects. Government departments and clients prefer NATSPEC specifications so that they are assured of a baseline level of project quality. Whilst drawings and schedules only provide the form and materials, it is a properly constructed specification that outlines the quality desired. For over 45 years NATSPEC has been trusted to deliver quality results.

Consultants prefer NATSPEC

The number of regulations that change each year continues to increase. Pressures on consultants' fees and the time required to design do not allow for individual organisations to monitor all the regulatory changes. NATSPEC provides the economies of scale to keep consultants up-to-date. Consultants know that NATSPEC is comprehensive and provides a clear outline of the quality of materials and tolerance of construction required. NATSPEC specifications save litigation and support the team's desire for successful projects.

Contractors prefer NATSPEC

It is a competitive world and as the industry continues to consolidate, greater emphasis is being placed on the cost of a project. Contractors want to compete on an even footing and a NATSPEC specification means that the job will not be lost to someone who will cut the quality of construction. NATSPEC is independent and does not favour one party over another.

Project managers prefer NATSPEC

When all parties are clear on the expected outcome, the project progresses quickly and without undue confrontation. NATSPEC's template specifications are written in simple plain English without duplication or contradiction so that Project Managers do not waste time clarifying project requirements.

NATSPEC is a national not-for-profit organisation, owned by Government and industry, whose objective is to improve the construction quality and productivity of the sustainable built environment through leadership of information. It is impartial and is not involved in advocacy or policy development.